5 - JUN. 99

# County Borough of Derby.

# ANNUAL REPORT

OF THE

# MEDICAL OFFICER OF HEALTH,

FOR THE

# YEAR 1898,

BY

**William J. Howarth, M.D., D.P.H., &c.,**

MEDICAL OFFICER OF HEALTH, AND MEDICAL SUPERINTENDENT OF THE
BOROUGH ISOLATION HOSPITAL.

DERBY:
RICHARD KEENE, LIMITED, PRINTERS, IRON GATE.

ROYAL STATISTICAL SOCIETY
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PRESENTED TO THE SANITARY COMMITTEE, MAY 1ST, 1899,
AND ORDERED TO BE PRINTED.

# County Borough of Derby.

## SANITARY COMMITTEE.

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Mr. Alderman HARRISON, J.P., Chairman.

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WM. BOULD, Certif. Sany. Institute.

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CHARLES H. RIGSBY. GEORGE HUBBLE.

### Medical Officer of Health.

WILLIAM J. HOWARTH, M.D., D.P.H., &c.

Public Health Department,
Ford Street, Derby,
1st May, 1899.

TO THE

## Chairman and Members of the Sanitary Committee.

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Gentlemen,

In accordance with the order of the Local Government Board, dated March 23rd, 1891, I beg to present the following report upon the Health and Sanitary Condition of the Borough of Derby for the year 1898, being the 22nd Annual Report of the Medical Officer of Health.

My actual acquaintance with the Health Department dates only from December 1st of the year under review, and on that account this report contains little more than a resumé of the work executed, with but few comments, my knowledge of the subjects at the time of compiling the report not being sufficiently extensive to justify my forming conclusions upon many important matters. A careful arrangement of the year's statistical material has been made, many of the tables being amplified and others re-arranged.

In introducing this report, I must express my deep obligation to the Chairman, Mr. Alderman Harrison, whose extensive knowledge of Sanitary work in this town has been of the utmost assistance to me, and whose time has invariably been willingly placed at my disposal. To Mr. Wilkinson, the Chief Inspector, and the assistant Inspectors, I wish to express my thanks. During the interval of six months which existed between the demise of my predecessor, Dr. Iliffe, and my appointment, the work was most efficiently and successfully directed by Mr. Wilkinson, who received invaluable assistance in medical matters from Councillor Dr. Laurie.

The treatment of cases at the Borough Isolation Hospital was undertaken by Dr. Rowan, whilst the supervision of the general administrative work received the Chairman's personal attention. Credit is due to Mr. Cope for the extra time he spent in assisting me to clear off the accumulated arrears of work, and assistance in statistical matters.

I have, Gentlemen, the honour to be,

Yours obediently,

WILLIAM J. HOWARTH,

MEDICAL OFFICER OF HEALTH.

# STATISTICAL SUMMARY, 1898.

| | | | | |
|---|---|---|---|---|
| Population estimated to the middle of 1898 | Males | 51,372 | Total | 104,834 |
| | Females | 53,462 | | |
| Marriages | | | | 961 |
| Annual rate of Persons Married per 1,000 of the population | | | | 18.3 |
| Births | Males | 1,470 | Total | 2,860 |
| | Females | 1,390 | | |
| Annual rate of Births per 1,000 of the population | | | | 27.2 |
| Deaths | Males | 879 | Total | 1,756 |
| | Females | 877 | | |
| Annual rate of Mortality per 1,000 | Males | 17.1 | Total | 16.7 |
| | Females | 16.4 | | |
| Excess of Registered Births over Deaths | | | | 1,104 |
| Estimated increase of Population during the year | | | | 1,543 |

*Area.*—The area of the Borough is 3,450 acres.

*Elevation.*—The population of Derby resides at a mean elevation of 182 feet above sea level, the highest point being at the Borough Boundary in Burton Road, 325 ft., and the lowest at "The Siddals," 142 ft. The elevation at the Market Place is 157 ft.

*Houses.*—At the census in 1891 there were 20,423 houses in this area, 19,199 of which were inhabited, 1,224 were empty, and 115 were in the course of erection.

*Density.*—The mean density of the Borough is equal to 30 persons per acre. The density of the various Wards is as follows:—Arboretum, 59; Kings Mead, 49; Becket, 48; Babington, 41; Castle, 29; Friargate, 26; Litchurch, 16; and Derwent 7 persons per acre.

*Annual Rateable Value.*—The rateable value of the Borough for 1898 was £365,504 10s. 0d. for District Rate purposes and £420,358 for Poor Rate purposes.

TABLE **A.**—Population, Number of Births, Total Deaths, and Deaths from certain causes, with the rates per 1,000 of the Population in the Borough of Derby for the past twenty-one years.

| YEAR. | Population. | Corrected Number of Deaths. | Death-rate per 1,000 living. | Births. | Birth-rate per 1,000 living. | Deaths from seven principal Zymotic Diseases. | Zymotic rate per 1,000 living at all ages. | Deaths from Phthisis. | Phthisis Death-rate. | Infantile Mortality per 1,000 Births. | Deaths from Respiratory Diseases exclusive of Phthisis. | Res-piratory Death-rate. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1878 | 80.385 | 1,613 | 20.1 | 3,092 | 38.4 | 257 | 3.1 | 162 | 2.0 | 148 | 296 | 3.6 |
| 1879 | 80.385 | 1,970 | 24.5 | 3,139 | 39.4 | 380 | 4.7 | 147 | 1.8 | 132 | 407 | 5.0 |
| 1880 | 80.385 | 1,614 | 20.1 | 3,050 | 37.9 | 233 | 2.8 | 140 | 1.7 | 145 | 224 | 2.7 |
| 1881 | 81.470 | 1,529 | 18.9 | 3,156 | 38.8 | 166 | 2.03 | 131 | 1.6 | 129 | 287 | 3.5 |
| 1882 | 82.687 | 1,533 | 18.5 | 2,959 | 35.7 | 187 | 2.2 | 140 | 1.6 | 139 | 259 | 3.1 |
| 1883 | 83.922 | 1,549 | 18.6 | 3,074 | 36.6 | 144 | 1.7 | 146 | 1.7 | 146 | 263 | 3.1 |
| 1884 | 85.176 | 1,569 | 18.4 | 3,013 | 35.3 | 181 | 2.1 | 131 | 1.5 | 143 | 259 | 3.0 |
| 1885 | 86.449 | 1,591 | 18.4 | 3,055 | 35.3 | 132 | 1.5 | 128 | 1.3 | 138 | 310 | 3.5 |
| 1886 | 87.741 | 1,651 | 18.8 | 3,069 | 35.9 | 166 | 1.8 | 154 | 1.7 | 148 | 272 | 3.1 |
| 1887 | 89.052 | 1,683 | 18.9 | 2,858 | 32.9 | 223 | 2.5 | 146 | 1.6 | 138 | 247 | 2.7 |
| 1888 | 90.383 | 1,550 | 17.1 | 2,824 | 31.2 | 163 | 1.8 | 116 | 1.2 | 145 | 271 | 2.9 |
| 1889 | 91.733 | 1,582 | 17.2 | 2,906 | 31.6 | 133 | 1.4 | 99 | 1.7 | 147 | 281 | 3.0 |
| 1890 | 93.105 | 1,843 | 19.8 | 2,699 | 28.9 | 260 | 2.7 | 143 | 1.5 | 160 | 326 | 3.5 |
| 1891 | 94.146 | 1,765 | 18.7 | 2,885 | 30.5 | 126 | 1.3 | 139 | 1.4 | 139 | 158 | 1.6 |
| 1892 | 95.908 | 1,736 | 18.1 | 3,038 | 31.6 | 174 | 1.8 | 140 | 1.4 | 171 | 295 | 3.0 |
| 1893 | 97.341 | 1,743 | 17.9 | 3,123 | 32.0 | 190 | 1.9 | 132 | 1.3 | 155 | 281 | 2.8 |
| 1894 | 98.795 | 1,468 | 14.9 | 2,890 | 29.2 | 151 | 1.5 | 103 | 1.0 | 121 | 249 | 2.5 |
| 1895 | 100.272 | 1,669 | 16.6 | 2,909 | 29.01 | 178 | 1.7 | 105 | 1.0 | 158 | 254 | 2.5 |
| 1896 | 101.770 | 1,577 | 15.6 | 2,834 | 27.8 | 182 | 1.8 | 137 | 1.3 | 150 | 240 | 2.3 |
| 1897 | 103.291 | 1,656 | 16.0 | 2,803 | 27.2 | 173 | 1.6 | 99 | .9 | 168 | 249 | 2.4 |
| 1898 | 104.834 | 1,756 | 16.8 | 2,860 | 27.28 | 235 | 2.2 | 133 | 1.2 | 169 | 257 | 2.4 |

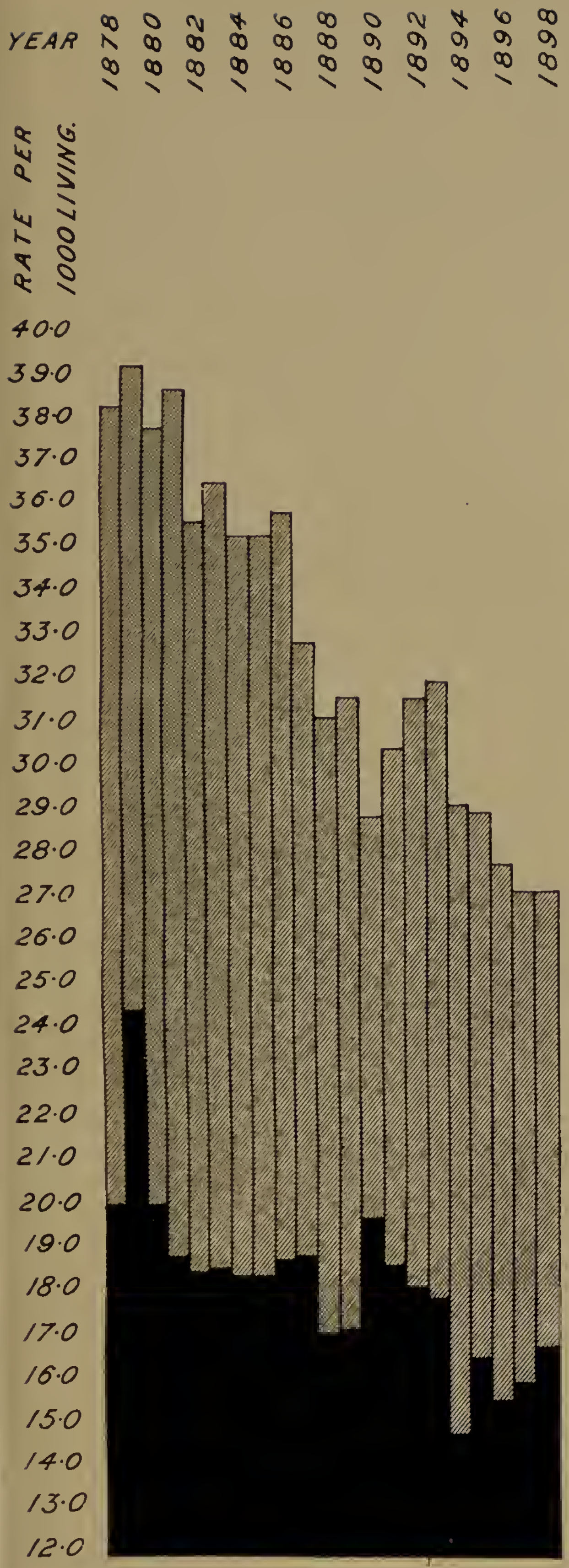

Fig 1.

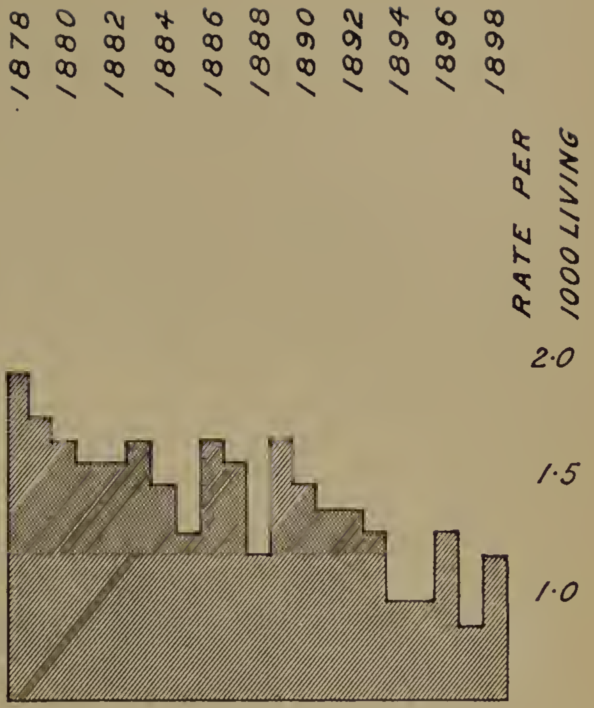

Fig 3.

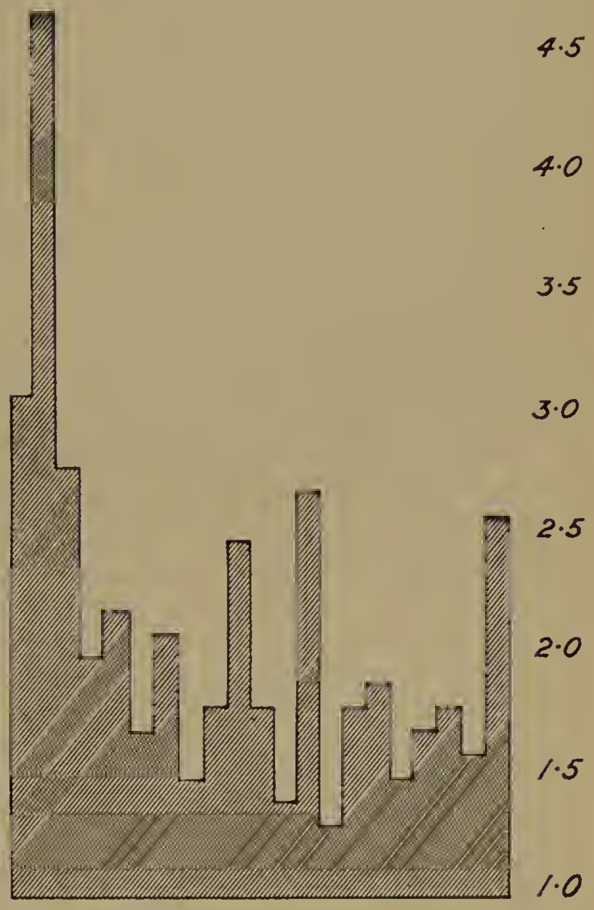

Fig 2.

FIGURE 1. Black columns represent death-rates, shaded columns birth-rates.

„ 2. Represents the curve formed by zymotic rates.

„ 3. Represents the curve formed by phthisis rates.

## Vital Statistics.

*Estimated Population.*—The population of the Borough as estimated by the Registrar-General is 104,834 being an increase of 1,540 on the previous year's estimate. This compares with increases of 1,521 in 1897; 1,498 in 1896; and 1,477 in 1895.

*Marriages.*—The number of marriages solemnized during 1898, was 961, which gives a rate of persons married equal to 18.3 per 1,000 of the population. The following are the numbers for the previous five years:—

| Year. | 1893. | 1894. | 1895. | 1896. | 1897. | 1898. |
|---|---|---|---|---|---|---|
| Number of Marriages. | 806 | 876 | 849 | 908 | 953 | 961 |
| Rate. | 16.5 | 17.7 | 16.9 | 17.4 | 18.4 | 18.3 |

*Births.*—The births registered during the year numbered 2860. of which there were:—

| | Males. | Females. | | Total. |
|---|---|---|---|---|
| Legitimate ... | 1414 | 1336 | 2750 | 2860. |
| Illegitimate ... | 56 | 54 | 110 | |

The illegitimate births are thus 3.8 per cent. of the total. The birth rate in 1898 was 27.2 per 1,000, and the registered births exceed the deaths by 1,103. The excess of births over deaths for the past six years is shown in the following table:—

| Year. | 1893. | 1894. | 1895. | 1896. | 1897. | 1898. |
|---|---|---|---|---|---|---|
| Births. | 3123 | 2890 | 2909 | 2834 | 2803 | 2860 |
| Deaths. | 1743 | 1468 | 1669 | 1577 | 1656 | 1756 |
| Excess of Births over Deaths. | 1380 | 1422 | 1240 | 1257 | 1147 | 1104 |

*Annual Rate of Mortality.*—The total number of deaths for the year 1898 was 1,756, as against 1,656 in 1897, and 1,577 in 1896. The number of deaths is larger than for the past four years but not to any considerable extent. The total death rate from all causes within the Borough was therefore 16.8 per 1,000, as against 16.0 per 1,000 in 1897, and 15.6 per 1,000 in 1896. Table and accompanying chart on page 8 gives particulars of deaths for previous years, and is useful for purposes of comparison.

In arriving at the correct general death rate for the year, care has been taken to make allowance for the deaths of strangers occurring in Public Institutions. It would be obviously unfair to include in the Derby statistics the death of a person from an outside district who came to the Infirmary in this town for treatment and died there. Certain deaths of strangers also occur in the Borough Asylum and Workhouse, but particulars of these for 1898 are not available, arrangements have been made which will rectify this for future years. 73 deaths of strangers have been reported, consisting of 43 males and 26 females, total 69 in the Infirmary, and one male, and three females in the wards of the Children's Hospital.

*Annual Rate of Mortality compared with other large Cities and Towns of England and Wales.*—The recorded death rate for the Borough of Derby without reference to age or sex distribution, is .76 per 1,000 less than the recorded death rate for England and Wales, and 2.21 per 1,000 less than the recorded death rate for the 33 large towns. The annual rate of Mortality for England and Wales was equal to 17.58 per 1,000, and for the 33 large towns 19.03, whilst for England and Wales, less the 33 large towns, it was 16.78 per 1,000, a number slightly less than the recorded death rate for Derby during the past year. These and other comparisons are shown in table B.

## Table B.—33 Great Towns: Population, Persons to an Acre. Births, Deaths, &c., for the Year, 1898.

| TOWNS. | | Estimated Population Middle of 1898. | Persons to an Acre. | Births. | Deaths. | Rate per 1,000. | | | Deaths of Infants under one per 1,000 Births. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Births. | Deaths. | Zymotics. | |
| 33 Towns | ... | 11,218,378 | 35.3 | 339,350 | 212,848 | 30.3 | 19.0 | 2.85 | 178 |
| London | ... | 4,504,766 | 60.3 | 132,432 | 83,936 | 29.5 | 18.7 | 2.78 | 167 |
| West Ham | ... | 286,654 | 60.9 | 8,749 | 4,406 | 30.6 | 15.4 | 2.68 | 170 |
| Croydon | | 124,421 | 13.8 | 3,146 | 1,723 | 25.4 | 13.9 | 1.99 | 150 |
| Brighton | ... | 122,310 | 48.4 | 3,024 | 2,062 | 24.8 | 16.9 | 2.36 | 181 |
| Portsmouth | ... | 186,618 | 40.0 | 4,974 | 3,033 | 26.7 | 16.3 | 2.16 | 156 |
| Plymouth | ... | 99,136 | 43.3 | 2,935 | 1,932 | 29.7 | 19.5 | 2.15 | 170 |
| Bristol | ... | 316,900 | 27.1 | 9,055 | 5,437 | 28.6 | 17.2 | 2.69 | 164 |
| Cardiff | ... | 177,770 | 29.3 | 5,520 | 2,627 | 31.1 | 14.8 | 2.24 | 158 |
| Swansea | . . | 102,001 | 20.1 | 2,941 | 1,889 | 28.9 | 18.6 | 3.21 | 184 |
| Wolverhampton | | 88,051 | 25.0 | 3,140 | 1,868 | 35.8 | 21.3 | 3.19 | 200 |
| Birmingham | ... | 510,343 | 40.2 | 17,316 | 10,179 | 34.0 | 20.0 | 2.78 | 191 |
| Norwich | ... | 111,699 | 14.8 | 3,329 | 2,112 | 29.9 | 19.0 | 3.26 | 192 |
| Leicester | ... | 208,662 | 24.3 | 6,156 | 3,522 | 29.6 | 16.9 | 3.35 | 191 |
| Nottingham | ... | 236,137 | 21.5 | 6,800 | 4,160 | 28.0 | 17.7 | 2.37 | 178 |
| **Derby** | ... | **104,834** | **30.4** | **2,861** | **1,759** | **27.4** | **16.8** | **2.26** | **169** |
| Birkenhead | ... | 113,189 | 32.4 | 3,429 | 1,969 | 30.4 | 17.4 | 2.53 | 186 |
| Liverpool | ... | 633,645 | 47.9 | 22,224 | 15,153 | 35.2 | 24.0 | 3.22 | 184 |
| Bolton | ... | 122,495 | 52.0 | 3,776 | 2,368 | 30.9 | 19.4 | 2.93 | 168 |
| Manchester | ... | 539,079 | 41.8 | 17,591 | 11,766 | 32.7 | 21.9 | 3.11 | 197 |
| Salford | ... | 215,702 | 41.7 | 7,475 | 4,884 | 34.7 | 22.7 | 4.03 | 212 |
| Oldham | ... | 148,288 | 31.4 | 3,748 | 2,600 | 25.3 | 17.6 | 2.15 | 175 |
| Burnley | ... | 109,546 | 27.9 | 2,964 | 1,781 | 27.1 | 16.3 | 2.04 | 195 |
| Blackburn | ... | 133,288 | 19.1 | 3,595 | 2,451 | 27.1 | 18.4 | 2.57 | 206 |
| Preston | ... | 116,356 | 28.5 | 3,596 | 2,245 | 31.0 | 19.3 | 3.07 | 225 |
| Huddersfield | | 102,454 | 8.6 | 2,295 | 1,627 | 22.5 | 15.9 | 1.61 | 159 |
| Halifax | ... | 96,729 | 11.3 | 2,210 | 1,724 | 22.9 | 17.9 | 2.15 | 163 |
| Bradford | .. | 233,737 | 21.7 | 5,594 | 4,102 | 24.0 | 17.6 | 2.12 | 185 |
| Leeds | ... | 416,618 | 19.3 | 12,968 | 7,983 | 31.2 | 19.2 | 3.12 | 182 |
| Sheffield | ... | 356,478 | 18.1 | 12,044 | 7,197 | 33.9 | 20.2 | 3.82 | 195 |
| Hull ... | ... | 229,887 | 25.6 | 7,666 | 4,209 | 33.4 | 18.4 | 2.99 | 182 |
| Sunderland | ... | 143,849 | 43.7 | 5,077 | 3,247 | 35.4 | 22.6 | 3.69 | 202 |
| Gateshead | ... | 103,775 | 33.1 | 3,679 | 2,133 | 35.5 | 20.6 | 3.10 | 208 |
| Newcastle | ... | 223,021 | 41.5 | 7,041 | 4,764 | 31.7 | 21.4 | 2.84 | 190 |

*District Mortality Rates.*—Table C shows the difference in the Mortality rates for the various Wards. The deaths in Public Institutions have been relegated to the Wards to which they belonged, with the exception of deaths occurring in the Workhouse. If these deaths had also been placed to the Wards in which the persons had previously resided, it is probable that the rates in each case would have been increased to some extent.

The table shows wide differences in the mortality rates, ranging from a general mortality of 22.31 in Derwent Ward to 11.44 in Friargate, and from a zymotic rate of 3.8 in Kings Mead Ward to 1.0 in Friargate Ward. In this report I am not prepared to discuss the causes contributing to this great difference in the death-rates, but in future reports it will receive that attention which it merits; no doubt the different sanitary conditions existing in the various divisions of the town will be shown to play a great part in effecting the results recorded.

*Mortality in Age Groups.*—The table of deaths on page 15 shows the number of deaths at the various age periods. Out of 1,830 deaths, 484, or 26 per cent. were those of children under one year of age. Between the ages of one and five years there were 234 deaths, bringing the contribution to the total deaths by children under five years of age to 718, or 39 per cent. of the whole. Between the ages of five and sixty there were 664 deaths, or 36 per cent. of the total, and persons over 60 years of age added 448 to the deaths, which represents 24 per cent. of the deaths registered. The better figures for comparison are the death rates per 1,000 living at the ages compared, such a comparison brings to view in a much more prominent manner the great differences which exist between the death rates at the extremes of life and those in the intermediate stage.

| Age periods. | Estimated number of persons living at the ages. | Number of deaths. | Death rate per 1000 living at each age period. |
|---|---|---|---|
| Under 1 ... | ... 2,600 | ... 484 | ... 186 1 |
| 1 and under 5 | ... 8,879 | ... 234 | ... 26.3 |
| 5 and under 60 | ... 86.391 | ... 664 | ... 7.6 |
| 60 and upwards | ... 5,956 | ... 448 | ... 75.2 |

*Infantile Mortality.*—The mortality of infants is represented as the proportion of deaths to each 1,000 births. There were in 1898, 2,860 births, and 484 deaths of infants, which equals a mortality of 169 per 1,000 births, as compared with 168 in 1897, 150 in

TABLE **C.**—Population, Density, Deaths, and certain Death Rates in the various Wards of the Borough of Derby for the Year 1898.

| WARDS. | Population in 1881. | Population in 1891. | Increase or decrease per cent. in inter-censal period. | Estimated population in middle of 1898. | Acreage | Density in persons per acre. | Total Deaths. | Death rate per 1,000 living. | Deaths from seven principal Zymotic Diseases | Zymotic death rate. | Deaths from Respiratory Diseases exclusive of Phthisis. | Respiratory death rate. | Deaths from Phthisis. | Phthisis death rate. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arboretum ... | 10,656 | 15,352 | + 44 | 19,765 | 331 | 59 | 263 | 13.30 | 33 | 1.6 | 28 | 1.4 | 11 | .55 |
| Babington ... | 9,646 | 11,386 | + 28 | 12,688 | 306 | 41 | 199 | 15.68 | 24 | 1.8 | 28 | 2.2 | 11 | .86 |
| Becket ... | 13,824 | 17,460 | + 26 | 20,434 | 423 | 48 | 310 | 15.17 | 37 | 1.8 | 51 | 2.4 | 26 | 1.27 |
| Castle ... | 11,369 | 10,914 | − 4 | 10,468 | 363 | 29 | 195 | 18.62 | 38 | 3.6 | 22 | 2.1 | 12 | 1.14 |
| Derwent ... | 5,421 | 5,666 | + 4 | 5,780 | 732 | 7 | 129 | 22.31 | 12 | 2.0 | 24 | 4.1 | 8 | 1.38 |
| Friargate ... | 9,551 | 12,251 | + 28 | 14,500 | 555 | 26 | 166 | 11.44 | 15 | 1.0 | 22 | 1.5 | 11 | .75 |
| Kings Mead | 12,319 | 13,078 | + 6 | 13,494 | 271 | 49 | 279 | 20.67 | 52 | 3.8 | 36 | 2.6 | 23 | 1.7 |
| Litchurch ... | 8,382 | 8,039 | − 5 | 7,705 | 464 | 16 | 92 | 11.94 | 11 | 1.4 | 11 | 1.4 | 7 | .9 |
| Institutions and others not accounted for above ... | ... | ... | ... | ... | ... | ... | 197 | ... | 13 | ... | 12 | ... | 24 | ... |
| Totals ... | 81,168 | 94,146 | + 16 | 104,834 | 3,445 | 30 | 1,830 | 17.45 | 235 | 2.24 | 234 | 2.2 | 133 | 1.26 |

1896, and an infantile mortality of 178 per 1,000 births in the 33 great towns, which latter figure is 11 per 1,000 above the average of the previous ten years. The diseases which have principally contributed to this large number of deaths have been as follows:—Zymotic diseases, 112, of which diarrhœa was responsible for 73; measles for 10, and whooping cough for 14. Marasmus was certified as being the cause of 38 deaths. This disease and diarrhœa may be regarded as the principal indices of the amount of negligent feeding of infants which exists. Premature birth caused 58 deaths, convulsions 69, teething 15, enteritis (probably in many cases epidemic diarrhœa) 23, atrophy and debility, which frequently result from negligent feeding, 40, and diseases of the respiratory system, 58 deaths. These figures, as your late Medical Officer frequently remarked, point most distinctly to the fact that the three chief contributing causes to infantile mortality are 1—negligent feeding, as evidenced by the deaths returned under the headings diarrhœa, atrophy, marasmus, and—in many cases—convulsions. 2—Reckless exposure of children, resulting in fatal respiratory mischief. 3—Prematurity, frequently resulting from avoidable causes at work during the child-bearing period.

In connection with a progressively decreasing birth rate, this infantile mortality assumes an important aspect, and every effort should be made to prevent this enormous waste of life at the earliest stage of existence, and by means of decreasing the number of deaths among infants, the effect of the diminishing number of births will be minimized to some extent.

*Senile Mortality.*—Of the 448 deaths over 60 years of age, 188 were those of persons between 70 and 80, 42 were between 80 and 85, and 22 were over 85. The chief causes of death were apoplexy 49, malignant disease 37, diseases of the respiratory organs 68, heart disease 75, whilst 104 persons were certified as having died the result of old age and senility. A more complete classification of deaths at numerous age periods is given in table D.

## Table D.—DEATHS REGISTERED IN DERBY FROM ALL CAUSES DURING THE YEAR 1898.

| DISEASES. | AGES IN YEARS. | | | | | | | | | | | | | | | | | | | | | | Total. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 to 1 | 1 to 2 | 2 to 3 | 3 to 4 | 4 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 to 55 | 55 to 60 | 60 to 65 | 65 to 70 | 70 to 75 | 75 to 80 | 80 to 85 | 85 and upwards | | 1 to 5 | 5 to 20 | 20 to 40 | 40 to 60 | 60 and upwards. |
| I. Spec: Febrile or Zymotic Diseases ... ... ... | 106 | 49 | 20 | 13 | 9 | 9 | 7 | 7 | 4 | 12 | 8 | 7 | 7 | 5 | 3 | 3 | 6 | 4 | ... | 1 | ... | 2 | 282 | 197 | 23 | 31 | 18 | 13 |
| II. Parasitic Diseases ... | 1 | 1 | .. | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... | ... | ... |
| III. Dietic Diseases .. ... | 55 | 6 | ... | ... | 1 | ... | ... | ... | ... | .. | ... | ... | 1 | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | 66 | 62 | ... | ... | 4 | ... |
| IV. Constitutional Dis. ... | 24 | 15 | 1 | 4 | 2 | 9 | 5 | 13 | 24 | 12 | 17 | 27 | 20 | 26 | 12 | 29 | 21 | 15 | 11 | 5 | 1 | .. | 293 | 46 | 27 | 80 | 87 | 53 |
| V. Developmental Dis. ... | 63 | ... | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | 2 | 8 | 26 | 33 | 23 | 12 | 170 | 66 | ... | ... | ... | 104 |
| VI. Local Diseases ... ... | 180 | 57 | 27 | 11 | 7 | 21 | 17 | 22 | 12 | 24 | 25 | 38 | 38 | 40 | 59 | 63 | 65 | 67 | 58 | 43 | 14 | 7 | 895 | 282 | 60 | 99 | 200 | 254 |
| VII. Deaths from Violence | 7 | 2 | 1 | 2 | 1 | 4 | 2 | 2 | ... | 4 | 3 | 1 | 1 | 3 | 3 | 3 | 5 | 2 | 5 | 5 | 1 | ... | 57 | 13 | 8 | 8 | 10 | 18 |
| VIII. Deaths from Ill-Defined and not Specified Causes ... ... ... | 48 | 2 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 2 | 4 | 1 | ... | 1 | 1 | ... | 3 | 1 | 65 | 50 | ... | 2 | 7 | 6 |
| Totals ... ... | 484 | 132 | 50 | 30 | 22 | 43 | 31 | 44 | 40 | 53 | 53 | 74 | 67 | 78 | 82 | 99 | 99 | 97 | 101 | 87 | 42 | 22 | 1830 | 718 | 118 | 220 | 326 | 448 |
| **I. Zymotic Diseases.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Miasmatic Diseases. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Small Pox ... ... ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Measles ... ... ... ... | 10 | 21 | 10 | 6 | 2 | 2 | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | .. | ... | ... | ... | ... | 53 | 49 | 2 | 1 | 1 | ... |
| Scarlet Fever ... ... ... | 3 | 2 | 4 | 2 | 4 | 2 | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | 20 | 15 | 4 | 1 | ... | ... |
| Typhus Fever ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Whooping Cough ... ... | 14 | 9 | 4 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | 28 | 28 | ... | ... | ... | .. |
| Diphtheria ... ... ... | ... | 1 | 2 | 3 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 | 7 | 2 | .. | ... | ... |
| Membranous Croup ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... |
| Simple Continued Fever ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... |
| Enteric Fever ... ... ... | ... | ... | ... | ... | ... | 2 | 4 | 6 | 1 | 6 | 3 | 4 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 28 | ... | 12 | 14 | 2 | ... |
| Other Miasmatic Diseases ... | 5 | ... | ... | 1 | 1 | 1 | ... | ... | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 2 | ... | ... | ... | ... | ... | 26 | 7 | 1 | 8 | 8 | 2 |
| 2. Diarrhœal Diseases: | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Simple Cholera... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... |
| Diarrhœa, Dysentery ... ... | 67 | 16 | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | ... | 1 | ... | ... | 2 | 2 | 3 | ... | 1 | ... | 2 | 97 | 84 | 1 | 1 | 3 | 8 |
| 3. Malarial Diseases:— | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remittent Fever ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Ague ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | .. | .. | ... | ... | ... | ... | .. | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4. Zoogenous Diseases: | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cow Pox, effects of Vaccination | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... |
| Hydroph. Gland: Splenic Fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

## DEATHS REGISTERED IN DERBY FROM ALL CAUSES DURING THE YEAR 1898—(Continued).

| DISEASE. | AGES IN YEARS. | | | | | | | | | | | | | | | | | | | | | | Total. | 1 to 5 | 5 to 20 | 20 to 40 | 40 to 60 | 60 and upwards. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 to 1 | 1 to 2 | 2 to 3 | 3 to 4 | 4 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 to 55 | 55 to 60 | 60 to 65 | 65 to 70 | 70 to 75 | 75 to 80 | 80 to 85 | 85 and upwards | | | | | | |
| 5. VENERAL DISEASES :— | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Syphilis ... ... ... ... | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | 6 | ... | ... | ... | ... |
| Gonorrhœa, Str. Ureth. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 6. SEPTIC DISEASES :— | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Erysipelas ... ... ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | 3 | 1 | ... | ... | ... | 2 |
| Pyœmia Septicœmia ... ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 4 | ... | 1 | ... | 2 | 1 |
| Puerperal Fever ... ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 8 | ... | ... | 6 | 2 | ... |
| **II. Parasitic Diseases** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Veg. Par. D. (Thrush) ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... | ... | ... |
| An. Par. D. Wrm. Hydtd. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **III. Dietic Diseases.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Starv., Want Breast Milk, Inanition, &c. ... ... ... | 17 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 18 | 18 | ... | ... | ... | ... |
| Marasmus ... ... ... | 38 | 5 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 45 | 44 | ... | ... | 1 | ... |
| Chr. Alcoholism ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | ... | 3 | ... |
| Delirium Tremens ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **IV. Constitutional Diseases.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rheum. Fev., Rheum. Heart... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 5 | ... | 2 | 2 | 1 | ... |
| Rheum. Chronic. ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | 4 | ... | ... | ... | ... | 4 |
| Gout ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Rickets .. ... ... ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... |
| Cancer, Malignant Disease ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 3 | 4 | 12 | 5 | 16 | 13 | 12 | 8 | 4 | ... | ... | 79 | ... | 1 | 4 | 37 | 37 |
| Tabes Mesenterica ... ... | 10 | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 12 | 11 | 1 | ... | ... | ... |
| Tuber. Mening. Hydroceph.... | 3 | 4 | ... | 1 | ... | 2 | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 14 | 8 | 4 | ... | 1 | 1 |
| Phthisis ... ... ... ... | ... | 2 | 1 | 3 | ... | 3 | 4 | 7 | 17 | 10 | 14 | 22 | 13 | 13 | 7 | 10 | 5 | 1 | 1 | ... | ... | ... | 133 | 6 | 14 | 63 | 43 | 7 |
| Tuberc. Dis., Scrofula ... | 5 | 3 | ... | ... | 2 | 2 | ... | 3 | 3 | 1 | 1 | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 22 | 10 | 5 | 5 | 2 | ... |
| Pupura, Hœmor. Diathesis ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Anœmia, Chlorosis Leucocyth | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 3 | ... | ... | 1 | 2 | ... |
| Diabetes Mellitus ... ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | 6 | ... | ... | 3 | 2 | 1 |
| Constitutional Dis. (other) ... | 6 | 4 | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 14 | 10 | ... | 2 | ... | 2 |
| **V. Developmental Diseases.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Premature Birth ... ... | 58 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 59 | 59 | ... | ... | ... | ... |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atelectasis ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... |
| Malform. Congen. Defects. ... | 5 | ... | ... | ... | 2 | ... | ... | ... | .. | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | 7 | ... | ... | .. | ... |
| Old Age... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 8 | 26 | 33 | 23 | 12 | 104 | ... | ... | ... | ... | 104 |
| **VI. Local Diseases.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. DIS. OF NERV. SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brain and Mem. Inflam. ... | 6 | 7 | 6 | 5 | ... | 4 | 1 | 1 | 1 | 1 | ... | ... | ... | ... | ... | 1 | 3 | 1 | 5 | 1 | 4 | ... | 47 | 24 | 6 | 2 | 1 | 14 |
| Apoplexy and Paralysis ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 2 | 5 | 7 | 10 | 11 | 6 | 13 | 14 | 14 | ... | 2 | 87 | ... | ... | 5 | 33 | 49 |
| Insanity, Gen. Par., Insane ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | .. | 1 | ... | 2 | .. | ... | ... | ... | ... | ... | ... | 4 | ... | 1 | ... | 3 | ... |
| Epilepsy... ... ... ... | ... | .. | ... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | ... | 1 | ... | 1 | ... | 1 | ... | .. | ... | ... | ... | 7 | ... | 2 | 2 | 2 | 1 |
| Convulsions ... ... ... | 69 | 13 | 3 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | 87 | 86 | ... | 1 | ... | ... |
| Laryng Strid. (Spasm. Glot). | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | .. | ... | 1 | 1 | ... | ... | ... | ... |
| Sp. Cord D., Parapl. Par. Agit | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | .. | ... | 2 | 1 | 1 | ... | ... | ... | ... | ... | 6 | ... | ... | 2 | 3 | 1 |
| Nervous Dis. (other) ... ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 2 | 3 | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | 10 | ... | 1 | 3 | 6 | ... |
| 2. DIS. OF ORG.—SPECIAL SENSE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ear, Eye, Nose Diseases ... | ... | 2 | ... | ... | 1 | 1 | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 3 | 1 | ... | ... | ... |
| 3. DIS. OF CIRCULATORY SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pericarditis ... ... ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... |
| Endocarditis (Acute) ... ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. |
| Valvular Disease ... ... | ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | 3 | ... | ... | .. |
| Heart Diseases (other) ... | ... | ... | ... | ... | 1 | 1 | 5 | 5 | 5 | 6 | 6 | 9 | 14 | 13 | 15 | 19 | 18 | 26 | 13 | 11 | 5 | 2 | 174 | ... | 11 | 26 | 61 | 75 |
| Aneurism ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 3 | ... | ... | 1 | 2 | ... |
| Embolism, Thrombosis ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... |
| Blood Vessels (other Dis. of)... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 3 | ... | 1 | 1 | 1 | ... |
| 4. DIS. OF RESPIRATORY SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Laryngitis ... ... ... | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 5 | 3 | ... | 1 | 1 | ... |
| Croup (Simple)... ... ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... |
| Asthma, Emphysema .. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 4 | 2 | ... | ... | ... | .. | 8 | .. | ... | ... | 2 | 6 |
| Bronchitis ... ... ... | 31 | 12 | 11 | 1 | 1 | ... | ... | 2 | 1 | 2 | ... | 1 | ... | 5 | 10 | 14 | 18 | 10 | 12 | 9 | 3 | 2 | 145 | 56 | 2 | 4 | 29 | 54 |
| Pneumonia ... ... ... | 24 | 14 | 3 | 2 | 1 | 6 | 2 | 4 | 2 | 3 | 3 | 4 | 1 | 4 | 3 | 4 | 2 | 2 | 1 | 1 | ... | ... | 86 | 44 | 12 | 12 | 12 | 6 |
| Pleurisy ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | .. | 3 | ... | 1 | ... | 2 | ... |
| Respiratory Dis. (other) ... | 2 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 3 | .. | ... | ... | 1 | 1 | ... | 1 | ... | ... | ... | 9 | 2 | 1 | 3 | 1 | 2 |
| 5. DIS. OF DIGESTIVE SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Teething ... ... ... | 15 | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 18 | 18 | ... | ... | ... | ... |
| Sore Throat (Quinsey) ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

# DEATHS REGISTERED IN DERBY FROM ALL CAUSES DURING THE YEAR 1898—(Continued).

| DISEASES. | AGES IN YEARS. | | | | | | | | | | | | | | | | | | | | | | Total. | 1 to 5 | 5 to 20 | 20 to 40 | 40 to 60 | 60 and upwards. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 to 1 | 1 to 2 | 2 ro 3 | 3 to 4 | 4 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 25 | 25 to 30 | 30 to 35 | 35 to 40 | 40 to 45 | 45 to 50 | 50 to 55 | 55 to 60 | 60 to 65 | 65 to 70 | 70 to 75 | 75 to 80 | 80 to 85 | 85 and upwards | | | | | | |
| Stomach (Diseases of) ... ... | ... | ... | ... | ... | .. | ... | .. | ... | ... | 1 | 2 | 1 | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | 7 | ... | ... | 4 | .. | 3 |
| Gastro. Muco. and Catarrhal | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Enteritis ... ... | 23 | 4 | 1 | .. | ... | ... | ... | ... | 2 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 33 | 28 | ... | 3 | .. | 2 |
| Intestine (Obst. Dis. of) ... | ... | ... | 1 | ... | 1 | 2 | ... | 1 | ... | ... | 3 | 1 | 3 | ... | 1 | 3 | 1 | 2 | ... | 1 | ... | ... | 20 | 2 | 3 | 4 | 7 | 4 |
| Peritonitis ... ... ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 1 | 2 | 2 | ... | ... |
| Ascites ... ... .. ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... |
| Liver (Cirrhosis of) ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 3 | ... | 3 | 4 | 1 | 4 | 3 | 4 | ... | ... | ... | 24 | ... | ... | 5 | 8 | 11 |
| Jaundice, Liver Dis. (other) ... | 1 | .. | .. | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 | ... | 2 | 1 | ... | 1 | ... | 2 | ... | ... | 11 | 1 | ... | 2 | 5 | 3 |
| Digest. Syst. (other Dis. of) ... | 4 | ... | ... | ... | 1 | ... | 3 | ... | ... | 1 | ... | 1 | ... | 1 | ... | 2 | ... | ... | 1 | 1 | ... | 1 | 16 | 5 | 3 | 2 | 3 | 3 |
| 6. DISEASES OF LYMPHATIC SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymph, Spleen Dis. ... ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | ... | ... |
| 7. DISEASES OF GLAN-LIKE ORGAN OF UNCERTAIN USE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bronchocele, Addison's Dis. | ... | .. | ... | ... | ... | ... | ... | ... | .. | ... | ... | .. | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 2 | ... |
| 8. DISEASES OF URINARY SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nephritis ... .. ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | 1 | 1 | ... | 1 | 3 | ... | 1 | ... | 1 | ... | 1 | ... | 11 | ... | 2 | 2 | 4 | 3 |
| Bright's Disease Albuminuria | ... | ... | ... | ... | ... | .. | ... | 2 | ... | ... | 1 | 2 | 1 | 1 | ... | ... | 2 | 1 | 2 | ... | ... | ... | 12 | ... | 2 | 3 | 2 | 5 |
| Bladder Prost. (Dis. of) ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | ... | ... | 3 | ... | ... | ... | ... | 3 |
| Urinary Organs (Dis. of) ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | 2 | 2 | ... | ... | 9 | 1 | 1 | ... | 2 | 5 |
| 9. DIS OF REPRODUCTIVE SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. Organs of Generation ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... |
| Male Organs ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 |
| Female Organs... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 1 | 2 | 1 | ... | ... | ... | 1 | ... | 1 | ... | ... | 10 | .. | ... | 5 | 3 | 2 |
| B. of Parturition ... ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | . | ... | ... | ... |
| Abortion, Miscarriage ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Puerperal Convulsions... ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Plac. Præv. Flooding ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... |
| Childbirth (other Accidents of) | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | .. | ... | 2 | ... | ... | 1 | 1 | ... |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10. DIS. OF BONES AND JOINTS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caries, Necrosis ... ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | 2 | ... | 1 | ... |
| Bone, Joint, (Diseases of) ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 2 | ... | 1 | ... |
| 11. DIS. OF INTEGUMENT. SYSTEM. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carbuncle, Phleg. Cellulitis ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | ... | 1 | ... | ... |
| Integ. Diseases (other) ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | 4 | 2 | ... | ... | 1 | 1 |
| **VII. Deaths from Violence.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. ACCIDENT OR NEGLIGENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fract. and Contusions ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 2 | ... | ... | 10 | 2 | ... | 4 | 2 | 2 |
| Burn, Scald ... ... ... | 2 | ... | ... | 1 | 1 | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 8 | 4 | 3 | ... | ... | 1 |
| Poison ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | 2 | ... | ... | ... | 1 | 1 |
| Drowning ... ... ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... |
| Suffocation ... ... ... | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | 6 | ... | ... | ... | ... |
| Otherwise ... ... ... | 1 | ... | 1 | 1 | ... | ... | 2 | 2 | ... | ... | 2 | ... | ... | 1 | 2 | ... | 5 | ... | 2 | 2 | ... | ... | 21 | 3 | 4 | 2 | 3 | 9 |
| 2. SUICIDE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gunshot Wound ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... |
| Cut, Stab ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 |
| Poison ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | 3 | ... | ... | ... | 2 | 1 |
| Drowning ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hanging ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | ... | ... | 1 | 1 |
| Otherwise ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 3 | ... | ... | 2 | ... | 1 |
| 3. EXECUTION. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hanging. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | 1 |
| **VIII. Deaths from Ill-defined and not specified causes.** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dropsy ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | ... | ... | 1 | 1 |
| Atrophy, Debility ... ... | 40 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 40 | 40 | ... | ... | ... | ... |
| Mortification, Gangrene ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 2 | 1 | 4 | ... | ... | ... | ... | 4 |
| Tumour ... ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 2 | ... |
| Abscess ... ... ... ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | 1 | ... |
| Natural Causes ... ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... |
| Not Specified, Ill-defined ... | 8 | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | 1 | ... | 14 | 9 | ... | 2 | 2 | 1 |

TABLE **E.**—Causes of Deaths registered in each of the ten years, 1888—1897, in 1898, and the average decennial numbers.

| | 1888 | 1889 | 1890 | 1891 | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | Average. | 1898 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL CAUSES ... | 1574 | 1614 | 1874 | 1792 | 1765 | 1772 | 1490 | 1698 | 1620 | 1720 | 1691 | 1830 |
| Small Pox ... ... | 1 | ... | 1 | ... | ... | 7 | . | 8 | ... | ... | 1.7 | ... |
| Measles ... ... | 20 | 4 | 119 | 24 | 20 | 15 | 59 | 6 | 32 | 17 | 31.6 | 53 |
| Scarlet Fever ... ... | 34 | 19 | 11 | 9 | 7 | 14 | 15 | 8 | 11 | 9 | 13.7 | 20 |
| Influenza ... ... | ... | ... | 4 | 63 | 26 | 42 | 16 | 30 | 17 | 27 | 22.5 | 26 |
| Typhus Fever ... ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... |
| Whooping Cough ... | 52 | 9 | 62 | 38 | 59 | 44 | 15 | 22 | 47 | 23 | 37.1 | 28 |
| Diphtheria ... ... | 7 | 19 | 20 | 17 | 20 | 6 | 5 | 6 | 11 | 9 | 12.0 | 9 |
| Ill-defined Fever . | ... | 8 | ... | 1 | .. | . . | ... | ... | ... | ... | ... | ... |
| Enteric Fever ... ... | 27 | 11 | 17 | 11 | 8 | 21 | 26 | 18 | 20 | 26 | 18.5 | 28 |
| Simple Cholera ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 3 | ... | ... |
| Diarrhœa, Dysentery ... | 22 | 63 | 30 | 26 | 60 | 83 | 31 | 110 | 63 | 89 | 57.7 | 97 |
| Venereal Affections ... | 6 | 4 | 6 | 7 | 8 | 9 | 4 | 6 | 3 | 4 | 5.7 | 6 |
| Erysipelas ... ... | ... | 8 | 8 | 7 | 6 | 3 | 2 | 1 | 1 | 2 | 3.8 | 3 |
| Pyæmia and Septicæmia | 1 | 4 | 4 | 3 | 2 | 4 | 2 | ... | 3 | 6 | 2.9 | 4 |
| Puerperal Fever ... | ... | 1 | ... | 6 | 5 | 6 | 3 | 2 | 3 | 2 | 3.0 | 8 |
| Other Zymotics ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | .. | .. | ... |
| Parasitic Diseases ... | 1 | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | .3 | 2 |
| Dietic Diseases, Intemp. | 5 | 8 | 5 | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 5.0 | 3 |
| Rheum. Fever & Rheum of Heart ... ... | 7 | 7 | 8 | 2 | 8 | 6 | 6 | 3 | 4 | 2 | 5.3 | 5 |
| Rheumatism . . ... | 6 | 9 | 5 | 1 | 5 | 5 | 4 | 4 | 3 | 3 | 4.5 | 4 |
| Cancer ... ... ... | 52 | 51 | 53 | 63 | 46 | 67 | 57 | 58 | 61 | 91 | 59.9 | 79 |
| Tabes Mesenterica ... | 18 | 20 | 25 | 15 | 22 | 25 | 19 | 31 | 23 | 21 | 21.9 | 12 |
| Tubercular Meningitis | 7 | 10 | 13 | 11 | 10 | 11 | 8 | 8 | 10 | 15 | 10.3 | 14 |
| Phthisis .. ... ... | 116 | 99 | 143 | 139 | 140 | 132 | 103 | 105 | 137 | 99 | 121.3 | 133 |
| Scrofula... ... ... | 17 | 20 | 25 | 16 | 23 | 17 | 20 | 19 | 16 | 15 | 18.8 | 22 |
| Other Constitutional Diseases ... ... | 109 | 98 | 118 | 109 | 137 | 116 | 88 | 126 | 104 | 116 | 112.1 | 87 |
| Premature Birth ... | 66 | 65 | 44 | 42 | 50 | 54 | 39 | 51 | 51 | 54 | 51.6 | 59 |
| Devel. Dis. & Cong. Def. | 1 | 4 | ... | 3 | ... | 2 | 4 | 8 | 7 | 7 | 36. | 7 |
| Old Age ... ... | 128 | 131 | 132 | 123 | 78 | 123 | 106 | 113 | 107 | 116 | 115.7 | 104 |
| Apoplexy and Paralysis | 42 | 37 | 34 | 33 | 39 | 36 | 39 | 34 | 51 | 53 | 39.8 | 87 |
| Epilepsy ... ... | 7 | 9 | 22 | 17 | 12 | 9 | 9 | 8 | 11 | 7 | 11.1 | 7 |
| Convulsions ... .. | 71 | 93 | 85 | 96 | 124 | 104 | 73 | 100 | 86 | 62 | 89.4 | 88 |
| Brain and Nerv. Dis. (other) ... ... | 92 | 112 | 106 | 125 | 108 | 100 | 106 | 127 | 92 | 104 | 107.2 | 67 |
| Organs, Special Sense Dis of ... ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 4 |
| Heart Diseases... .. | 134 | 132 | 153 | 164 | 139 | 142 | 138 | 170 | 163 | 173 | 150.8 | 184 |
| Croup ... ... ... | 3 | 4 | 8 | 12 | 8 | 8 | 5 | 4 | 5 | 7 | 6.4 | 1 |
| Bronchitis ... ... | 150 | 193 | 176 | 212 | 179 | 175 | 140 | 155 | 135 | 140 | 165.5 | 145 |
| Pneumonia ... ... | 77 | 60 | 91 | 81 | 79 | 81 | 77 | 71 | 76 | 81 | 77.4 | 86 |
| Lung and Respiratory Dis. (other) ... ... | 44 | 28 | 59 | 65 | 37 | 25 | 32 | 28 | 29 | 28 | 37.5 | 25 |
| Teething ... ... | 27 | 32 | 26 | 7 | 24 | 36 | 19 | 12 | 6 | 30 | 21.9 | 18 |
| Quinsy .. ... ... | 1 | ... | ... | . . | ... | .. | ... | ... | ... | .. | ... | ... |
| Digestive Org. Disease | 91 | 108 | 127 | 118 | 117 | 101 | 96 | 112 | 102 | 137 | 110.9 | 116 |
| Urinary Org. Disease ... | 43 | 41 | 45 | 26 | 49 | 38 | 32 | 38 | 44 | 51 | 40.7 | 35 |
| Parturition ... ... | 13 | 9 | 10 | 13 | 15 | 12 | 8 | 10 | 9 | 6 | 10.5 | 3 |
| Generative Org. Disease | 4 | 5 | 9 | 5 | 8 | 2 | 4 | 3 | 6 | 5 | 5 1 | 11 |
| Other Local Diseases ... | 18 | 14 | 17 | 18 | 8 | 18 | 11 | 8 | 8 | 12 | 13.2 | 16 |
| Accident ... ... | 34 | 39 | 41 | 37 | 58 | 41 | 49 | 43 | 42 | 46 | 43.0 | 48 |
| Homicide ... ... | 1 | 1 | ... | 3 | ... | ... | ... | ... | 3 | ... | ... | ... |
| Suicide ... ... ... | 3 | 11 | 5 | 1 | 4 | 10 | 14 | 10 | 5 | 2 | 6.5 | 10 |
| Execution ... ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 |
| Other Causes ... ... | 15 | 13 | 6 | 18 | 12 | 17 | 1 | 17 | 5 | 15 | 11.9 | 65 |

*Mortality from Special Diseases.*—Table E shows the number of deaths from the principal diseases for the past ten years, as well as the average for the decennium, and the following table shows the excess, or diminution of certain diseases over the decennial averages :—

| Cause of Death. | Diminution in 1898. | Excess in 1898. |
|---|---|---|
| Measles | — | 21 |
| Scarlet Fever | — | 8 |
| Influenza | — | 4 |
| Whooping Cough | 9 | — |
| Diphtheria | 3 | — |
| Enteric Fever | — | 10 |
| Diarrhœal Diseases | — | 40 |
| Phthisis | — | 12 |
| Prematurity | — | 8 |
| Heart Diseases | — | 34 |
| Bronchitis | 20 | — |
| Pneumonia | — | 9 |
| Other Respiratory Diseases | 12 | — |
| Urinary Diseases | 5 | — |

*Uncertified Deaths.*—It is extremely satisfactory to note that all deaths were certified either by medical practitioners or the coroner. There were 158 inquests held during the year.

## Notification of Infectious Diseases.

The total number of cases of infectious disease notified under the Derby Improvement Act of 1879, was 720, as against 618 in 1897, and 580 in 1896.

The highest and lowest weekly incidences were as follows :—

| Week ending. | 1898 | Fresh Cases. |
|---|---|---|
| October 8th | highest number | 28 |
| July 1st | lowest number | 1 |

The number of cases notified in 1898 seems to have been considerably greater than in previous years, excluding measles and whooping cough. The following table is useful for comparative purposes :—

Table **F.**—Number of cases of Infectious Disease notified in the Borough of Derby for 1898, and for each year since 1880.

| DISEASES. | 1880 | 1881 | 1882 | 1883 | 1884 | 1885 | 1886 | 1887 | 1888 | 1889 | 1890 | 1891 | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Pox .. ... | ... | 46 | 15 | 2 | 7 | ... | ... | ... | 20 | ... | 5 | ... | 11 | 52 | 3 | 94 | 1 | 1 | ... |
| Scarlet Fever ... ... | 372 | 423 | 770 | 506 | 389 | 232 | 167 | 64 | 756 | 775 | 346 | 318 | 470 | 501 | 513 | 364 | 427 | 432 | 481 |
| Diphtheria ... ... | ... | 6 | 10 | 8 | ... | 1 | 6 | 27 | 23 | 46 | 81 | 66 | 67 | 50 | 46 | 43 | 45 | 57 | 74 |
| Enteric & Contd. Fever | 144 | 95 | 113 | 51 | 344 | 57 | 162 | 105 | 163 | 99 | 64 | 66 | 55 | 111 | 104 | 99 | 104 | 125 | 159 |
| Typhus Fever ... ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Cholera ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... |
| Puerperal Fever ... | ... | 6 | 6 | 7 | 11 | 2 | 1 | 1 | 3 | 5 | 1 | 8 | 9 | 11 | 7 | 10 | 3 | 3 | 6 |
| Totals ... ... | 516 | 577 | 914 | 574 | 751 | 292 | 336 | 197 | 965 | 925 | 497 | 458 | 612 | 727 | 673 | 510 | 580 | 618 | 720 |

In addition to the above, the following cases of measles were also notified during short periods of voluntary notification :—1884, 513 cases; 1887, 873 cases; 1888, 33 cases.

It will be noticed from table F that scarlet fever was by far the most prevalent of the infectious diseases, and that a marked increase of cases notified from diphtheria and enteric fever also occurred. The succeeding table shows that scarlet fever was most prevalent during the third and fourth quarters of the year, and enteric fever during the first and fourth quarter, instead of during the third and fourth, which is usually the case. The rate per 1,000 of the population of notified cases was 6.8, as compared with 6.7, the mean rate for the previous ten years; and the mean weekly incidence of cases was 1.4 above the average for the same decennial period.

**Cases notified during 1898.**

| Quarters. | Totals. | Small Pox. | Scarlet Fever. | Diphtheria | Typhus Fever. | Enteric Fever. | Relapsing Fever. | Puerperal Fever. |
|---|---|---|---|---|---|---|---|---|
| First ... | 165 | ... | 100 | 20 | ... | 41 | ... | 4 |
| Second... | 118 | ... | 81 | 16 | ... | 21 | ... | ... |
| Third .. | 159 | ... | 119 | 14 | ... | 25 | ... | 1 |
| Fourth ... | 278 | ... | 181 | 24 | ... | 72 | ... | 1 |
| Year ... | 720 | ... | 481 | 74 | ... | 159 | ... | 6 |

*Preventive measures adopted against the spread of Infectious Diseases.*—The following is a brief summary of the work done in this direction.

| | QUARTERS. | | | | |
|---|---|---|---|---|---|
| | First | Second | Third | Fourth | Totals. |
| Cases isolated :— | | | | | |
| Scarlet Fever in the Borough Sanatorium | 71 | 54 | 91 | 108 | 324 |
| ,, ,, Royal Infirmary | 2 | 0 | 1 | 1 | 4 |
| Diphtheria ,, ,, ,, | 7 | 5 | 6 | 5 | 23 |
| Enteric Fever ,, ,, ,, | 27 | 11 | 19 | 40 | 97 |
| Totals ... ... | 107 | 70 | 117 | 154 | 448 |
| Cases desiring removal, but for whom no accommodation could be found :— | | | | | |
| Scarlet Fever ... ... ... | ... | ... | 2 | 28 | 30 |
| Diphtheria ... ... ... | ... | ... | ... | 1 | 1 |
| Enteric Fever ... ... ... | 3 | 1 | ... | 6 | 10 |
| Totals ... ... ... | 3 | 1 | 2 | 35 | 41 |

| | QUARTERS. | | | | |
|---|---|---|---|---|---|
| | First. | Second. | Third. | Fourth. | Totals. |
| Cases whose removal was delayed owing to want of accommodation :— | | | | | |
| Scarlet Fever ... ... ... | ... | ... | 9 | 38 | 47 |
| Enteric Fever ... ... .. | 5 | 3 | 1 | 11 | 20 |
| Totals ... ... ... | 5 | 3 | 10 | 49 | 67 |

| | | | | | |
|---|---|---|---|---|---|
| Inspectors' visits to Infectious cases numbered ... ... ... ... | 459 | 512 | 320 | 993 | 2284 |

It will thus be seen that out of 481 cases of scarlet fever which were reported, 324 were isolated in the Borough Hospital, of which number 5 died, representing a case mortality of 1.5 per cent., as compared with 4.1 for the whole town, and 9.5 per cent. amongst those cases treated outside the Isolation Hospital. Four cases however died in the Royal Infirmary, and were suffering from some other illness, and if these are excluded, the comparison is a mortality of 1.5 in the Isolation Hospital, as compared with a mortality of 7 per cent. amongst the remaining cases. The increasing desire to be treated in the Isolation Hospital during recent years is very gratifying, and although the percentage of cases so treated this year is less than last, there would have been but little difference had it been possible to find accommodation for all who were willing. The following table shows the number of cases of scarlet fever isolated in the Borough Sanatorium since it was opened in May, 1890, and also in the Infirmary, together with the percentage of the cases isolated.

| YEAR. | | 1890 | 1891 | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cases notified ... ... | | 346 | 318 | 470 | 501 | 513 | 364 | 427 | 432 | 481 |
| Isolated | Borough Sanatorium | 80 | 111 | 168 | 58 | 200 | 167 | 306 | 338 | 324 |
| | Royal Infirmary ... | 113 | 82 | 125 | 137 | 25 | 2 | ... | ... | 4 |
| Percentage of Cases Isolated ... ... | | 55 | 62 | 62 | 38 | 43 | 46 | 71 | 78 | 68 |

With respect to enteric fever, 97 cases, or 61 per cent. of the whole were isolated in the wards of the Royal Infirmary. There were 14 deaths among these, which represents a case mortality of 14 per cent., as compared with 17 per cent. for the whole town, and 22 per cent. amongst the cases treated at home.

*Infectious Diseases and Schools.*—It was not found necessary during the year to close any of the Schools within the Borough, neither were any disinfected. The accompanying table G shows the percentage of cases of scarlet fever to scholars attending the Schools. I am indebted to Mr. Cooper, Clerk to the School Board, for the information.

TABLE **G.**—*Shewing Relation of Schools to Scarlet Fever cases in* 1898.

| NAMES OF SCHOOLS. | Number of Pupils. | Number of Cases. | | | | TOTALS. | Percentage of cases to Pupils. |
|---|---|---|---|---|---|---|---|
| | | First Quarter. | Second Quarter. | Third Quarter. | Fourth Quarter. | | |
| CHURCH SCHOOLS. | | | | | | | |
| All Saints' | 491 | ... | 1 | 1 | 5 | 7 | 1.42 |
| Christ Church | 485 | 1 | ... | ... | 1 | 2 | .41 |
| St. Alkmund's | 291 | 1 | ... | ... | ... | 1 | .34 |
| St. Anne's | 587 | ... | 7 | 7 | 24 | 38 | 6.47 |
| St. Andrew's | 640 | 3 | 1 | ... | 4 | 8 | 1.25 |
| St. Chad's | 674 | 11 | 5 | 1 | 4 | 21 | 3.11 |
| St. Dunstan's | 485 | 2 | ... | ... | 3 | 5 | 1.03 |
| St. James' .. (Rose Hill Street) | 545 | ... | 5 | ... | 1 | 6 | 1.10 |
| St. James' ...(Malcolm Street) | 385 | ... | ... | ... | 2 | 2 | .51 |
| St. John's | 598 | 2 | 2 | 15 | 2 | 21 | 3.51 |
| St. Luke's | 743 | 1 | ... | 2 | 6 | 9 | 1.21 |
| St. Mark's | 276 | ... | ... | ... | ... | ... | ... |
| St. Paul's | 521 | ... | ... | ... | ... | ... | ... |
| St. Peter's | 421 | ... | 3 | 1 | 2 | 6 | 1.42 |
| St. Thomas' | 149 | ... | ... | 3 | 2 | 5 | 3.35 |
| St. Werburgh's | 350 | ... | ... | ... | 6 | 6 | 1.71 |
| Practising or Training | 326 | ... | ... | ... | 8 | 8 | 2.45 |
| Trinity | 609 | 1 | 2 | 2 | 2 | 7 | 1.14 |
| WESLEYAN SCHOOLS. | | | | | | | |
| Canal Street | 655 | 1 | 1 | 9 | 5 | 16 | 2.44 |
| Parliament Street | 237 | 1 | ... | ... | 2 | 3 | 1.26 |
| ROMAN CATHOLIC SCHOOLS. | | | | | | | |
| St. Joseph's | 173 | 1 | ... | 3 | 1 | 5 | 2.88 |
| St. Mary's | 455 | 1 | ... | ... | ... | 1 | .22 |
| BOARD SCHOOLS. | | | | | | | |
| Ashbourne Road | 1870 | 4 | 5 | 7 | 17 | 33 | 1.76 |
| Firs Estate | 1492 | 1 | 1 | ... | 3 | 5 | .33 |
| St. James' Road | 2019 | 8 | 9 | 7 | 7 | 31 | 1.53 |
| Nun Street | 696 | 1 | 1 | 6 | 11 | 19 | 2.72 |
| Orchard Street | 424 | ... | ... | 1 | ... | 1 | .23 |
| Pear Tree | 518 | ... | ... | ... | ... | ... | ... |
| Traffic Street | 1001 | 7 | 8 | 7 | 2 | 24 | 2.39 |
| Gerard Street | 1797 | 2 | ... | 2 | 14 | 18 | 1.00 |
| Private Schools | ... | 3 | 4 | 2 | 1 | 10 | ... |
| | 19,903 | 52 | 55 | 76 | 135 | 318 | |

### *Mortality from Zymotic Diseases.*—

Zymotic Mortality during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 1.5 | 1.7 | 1.8 | 1.6 | 2.24 | 2.22 | 2.85 |

The total deaths from the seven principal Zymotic diseases during 1898 numbered 235, as compared with 173 the previous year, and 184, 178, and 151, in the years 1896, 1895, and 1894 respectively. This number of deaths represents a mortality equal to 2.24 per 1,000 of the population, and is .5 per 1,000 higher than the average of the previous ten years. It is only slightly higher than the rate in the whole of England and Wales, and is .61 per 1,000 less than the rate in the 33 great towns. In the following analyses of the zymotic mortality, it will be seen that the increase in the deaths from measles and diarrhœa is chiefly responsible for the increased zymotic rate.

### *Small Pox.*—

Mortality from Small-Pox during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1,000 | 0 | .08 | 0 | 0 | 0 | 0.01 | 0.00* |

No case of Small Pox was reported in the Borough during 1898, and no death from the disease have been recorded since 1895. In relation to Small Pox, the table on page 31 is of considerable interest.

### *Scarlet Fever.*—

Mortality from Scarlet Fever during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1,000 | .15 | .08 | .10 | .08 | .19 | 0.11 | 0.14 |

As has been previously pointed out, the number of cases of Scarlet Fever notified were in excess of the ten years average, and as a result the number of deaths exceeded the average; they were 20 and 13 respectively. The death-rate from this disease was .19 per 1,000, as compared with an average of .14 per 1,000 for the previous ten years. This rate is higher than the rate for England and Wales, 0.11, and also for the 33 towns, 0.14. In previous years your late Medical Officer called attention to the negligence of notification of Scarlet Fever cases by parents, whose children were suffering from the disease, and were not attended by a duly registered Medical Practitioner. My few months' experience enables me most emphatically to bear out this complaint, and so frequently is this negligence brought to light, that it would appear that notification and adoption of precautions are regarded by some persons as a favour to the Sanitary Authority, rather than as an absolute duty. The sooner these persons' minds are disabused of this idea the better for the town. Ignorance of the nature of the disease is frequently put forward as an excuse, but when children are sent home from school with desquamating hands, and when examined large flakes of skin are found to be peeling from the body and feet, I am of opinion that ignorance must occupy a very secondary position to culpable negligence. The system of school notification which has recently been adopted, has already shown its utility by bringing numerous cases of this kind to the knowledge of your Medical Officer and Inspectors.

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*There were 13 deaths from Small Pox in the 33 Great Towns, which number is not sufficient to give a rate of 0.005 per 1,000.

One very urgent necessity in connection with the preventive measures, which ought to be adopted in these cases of Scarlet Fever, is a better means for removing bedding and clothing to the steam disinfector at the hospital. At the present time the bedding is exposed to the fumes of whatever disinfectant is used in the room, which can hardly be considered satisfactory, and although the principle of steam disinfection has recently been recognised by the Sanitary Committee as desirable, it is not at present possible to carry it out in any but a few instances. It is probable that improvements in this direction will shortly be suggested.

### *Diphtheria.*

Mortality from Diphtheria during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 0.05 | 0.05 | 0.10 | 0.08 | 0.08 | 0.24 | 0.31 |

The deaths from Diphtheria in 1898 numbered 9, a similar number to 1897. A reference to table E, page 20, will show that in the last six years the deaths from this disease have only once exceeded 10, whilst the average for the previous five years was nearly 17. The death-rate was at the rate of .08 per 1,000, as compared with .13 the average for the previous ten years, and .24 for England and Wales, and .31 for the 33 great towns; numbers which are considerably in favour of this town.

### Measles.—

Mortality from Measles during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 0.59 | 0.05 | 0.31 | 0.16 | 0.50 | 0.41 | 0.56 |

Measles was epidemic in Derby during 1898, and caused 53 deaths, which exceeds the decennial average by 22, and compares unfavourably with 27 in 1897, and 17 1896. The death-rate was thus at the rate of .50 per 1,000, which is rather less than the average rate in the 33 towns, and higher than the rate for England and Wales, and also than the decennial average for Derby, which were respectively 0.41, and 0.34 per 1,000.

### Whooping Cough.—

Mortality from Whooping Cough during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 0.15 | 0.25 | 0.46 | 0.22 | 0.26 | 0.31 | 0.42 |

### Enteric Fever.

Mortality from "Fever" during the past five years.

| Years. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 0.26 | 0.17 | 0.19 | 0.25 | 0.26 | 0.18 | 0.20 |

There were 28 deaths from enteric fever recorded during the year as compared with 26 in 1897, and 20 in 1896. The average death rate for the previous decennium was 0.20 per 1,000; the year 1898 shows an excess over this of .06 per 1,000. I am unable to make any comments in this report as to the prevalence of enteric fever in the Borough, although the fact that the death-rate from this disease is higher than the rate for England and Wales, and the 33 towns calls for such. The method of disposal of the excrement of patients suffering from this disease, as it is carried out in the Borough, I do not consider satisfactory; I refer to those houses which have pails and privies and not water closets. It is probable that the burial of the excreta a few inches below the surface of the ground, except in specially selected districts is not unaccompanied by risk, especially in view of the recent observations on the vitality of the bacillus typhosus in polluted soils. It would be better to have special pails provided for such cases with frequent removal, and disposal of the contents at the destructor.

### *Diarrhœa.*

Mortality from Diarrhœa during the past five years.

| Year. | 1894 | 1895 | 1896 | 1897 | 1898. | | |
|---|---|---|---|---|---|---|---|
| | | | | | Derby. | England and Wales. | 33 Great Towns. |
| Rate per 1000 | 0.31 | 1.09 | 0.61 | 0.86 | 0.92 | 0.96 | 1.22 |

The deaths from diarrhœa numbered 97 as compared with 89, and 63 in the years 1897, and 1896. The death rate was .96 per 1000 as compared with 0.70 the average for the previous ten years, and 0.96 the rate for England and Wales, and 1.22 for the 33 great Towns. The death-rate is higher than for the past ten years with the exception of 1895, and with a view to diminishing the mortality from this disease the flushing of courts and passages which was—I understand—discontinued last year, should be again instituted. The benefits of cleanliness of the surface of courts which are in many instances much enclosed cannot be overstated. Diarrhœa numbers young children principally as its victims—83 deaths out of 97, were those of children under 2 years of age—and these are fed on milk which possibly becomes infected by a specific germ carried in the dust which is blown about, and if only in this way, it is evident that a dirty court is a place of no small danger to infants.

*Puerperal Fever.*—During the year 1898, puerperal fever caused 8 deaths which is equal to a death-rate of .07 per 1000 as compared with rates of .01 and .02 per 1000 in 1897, and 1896.

A considerable amount of misunderstanding would appear to exist as regards the exact nature of the condition at the puerperium which may rightly be termed "Puerperal Fever," and in that respect I think the following opinion of a Committee of the Royal College of Physicians is important :

> "That this Committee is of opinion that, with a view to the limitation of

dangerous infectious diseases, the London County Council would be acting rightly in adopting the view that the expression "Puerperal Fever" . . . should be taken to includes septicæmia, pyæmia, septic peritonitis, septic metritis, and other acute septic inflammations in the pelvis occuring as the direct result of childbirth." The Council of the Obstetrical Society in addition to an opinion corresponding with the above, suggest that after puerperal fever the following words should be added, as an inclusive definition. "That is, septicæmia and pyæmia, including peritonitis and all cases of acute pelvic inflammation occurring in connection with childbirth."

*Influenza.*—Influenza was responsible for 26 deaths as compared with 27 in 1897, 17 in 1896, and 30 in 1895, the average number for the previous decennium being 22. The death-rate was equal to .24 per 1,000.

*Housing of the Working Classes.*—In 1898, 19 houses were condemned as unfit for human habitation. The following is a list of the houses together with their condition at the beginning of the present year.

| NUMBER OF NOTICE. | SITUATION OF HOUSES. | RESULT. |
|---|---|---|
| 77 | 6 Cottages, Becket Well Lane. | Three houses abolished, and three converted into a Workshop. |
| 78 | 5 Houses, 7 and 8 East Street and Court. | These Houses are closed, and no attempt has been made to make them habitable. |
| 79 | 8 Cottages, Greyhound yard. | Certain alterations have been carried out here, but the property is still far from satisfactory. |

*Dairies, Cow-sheds, and Milk-shops Order, 1885.*—The regulations which were drawn up by your late Medical Officer in 1897, were adopted during the past year, and came into force on the 13th day of July, 1898.

*Water Supply.*—The following is the copy of an analysis of water made by the Borough Analyst with his remarks thereon :—

Report on a sample of water received on Feb. 8th from Inspector W. Wilkinson, Derby.

Town Water. 100,000 parts were found to contain Chlorine 2.00, Sulphuric Acid 6.28, Nitric Acid 0.54, Phosphoric Acid none, Free

Ammonia 0.0010, Albuminoid Ammonia 0.0047, Oxygen absorbed from permanganate in 15 minutes 0.0116, in 4 hours 0.0348, Total Solids dried at 212° F. 36.80, loss on ignition 2.00, Total hardness 19.5, colour in two foot stratum, faint greenish blue. The above results are entirely satisfactory.

Signed, OTTO HEHNER,
Public Analyst.

*Sanitary Legislation.*—The principal Act of the year was the new Vaccination Act, which by the effect of the "Conscience Clause" has all but abolished compulsory vaccination. The Act came into operation on January 1st, 1899, and is to remain in force for five years, unless in the meantime that period be extended. In reference to vaccination the following table is worthy of attention. I reserve all comments for a future occasion.

TABLE **H.**—*Showing the percentage of successful Vaccinations in the Borough of Derby for the* 11 *years* 1873-83, *and for each year from* 1884-1898.

| YEAR | Births. | Died unvaccinated. | Insusceptible and postponed | Total available Children. | Successfully Vaccinated. | Percentage of Children Vaccinated. |
|---|---|---|---|---|---|---|
| 11 Years 1873-83 | 31,011 | 3,767 | 180 | 27,244 | 24,723 | 90 7 |
| 1884 | 2,882 | 356 | 7 | 2,526 | 1,673 | 66. |
| 1885 | 2,904 | 337 | 44 | 2,567 | 2,151 | 83. |
| 1886 | 2,896 | 328 | 39 | 2,568 | 2,363 | 92. |
| 1887 | 2,673 | 281 | 30 | 2,392 | 2,209 | 92. |
| 1888 | 2,720 | 306 | 47 | 2,414 | 2,186 | 90. |
| 1889 | 2,707 | 314 | 12 | 2,393 | 2,032 | 84. |
| 1890 | 2,597 | 289 | 4 | 2,308 | 1,893 | 82. |
| 1891 | 2,914 | 368 | 5 | 2,546 | 1,681 | 66. |
| 1892 | 3,015 | 428 | 5 | 2,587 | 1,134 | 43. |
| 1893 | 3,142 | 420 | 4 | 2,722 | 737 | 27. |
| 1894 | 2,934 | 345 | 2 | 2,589 | 453 | 17. |
| 1895 | 2,941 | 454 | 4 | 2,487 | 283 | 11. |
| 1896 | 2,876 | 406 | 3 | 2,470 | 210 | 8. |
| 1897 | 2,826 | 430 | 1 | 2,396 | 145 | 6. |
| 1898 | 2,869 | 389 | 0 | 2,480 | 330 | 13. |

Mr. W. H. Whiston informs me that the number of vaccination certificates granted under the new Act for the first four months after the passing of the Act was only 51.

*Meteorological Records.*—I have to thank Mr. W. G. Carnt, Secretary of the Royal Infirmary, and Messrs. Davis & Son for the information from which the subjoined table has been compiled. Meteorological observations are of considerable value to a Health Department, and Mr. Carnt has arranged to forward, at regular intervals, the results of the observations made at the Infirmary.

The total rainfall for the year was 22.52 inches, which is about 4.5 inches less than the average of the previous 21 years, and 5.5 inches less than fell in 1897. Most rain fell in October and May. The driest months were September and July.

TABLE **I.**—Shewing the Means of the Meteorological observations taken at the Derbyshire Royal Infirmary for the 12 months ended 31st December, 1898, together with further particulars as to rainfall recorded by Messrs. Davis & Son.

| 1898. | THERMOMETERS. | | | | RAINFALL IN INCHES. | | | | No. of Rainy days. 1898. |
|---|---|---|---|---|---|---|---|---|---|
| | Dry Bulb. | Wet Bulb. | Shade Temperature. Maximum. | Shade Temperature. Minimum. | Infirmary Grounds 1898. | Amen Alley, 1898. | 1897. | Average for past 21 years. | |
| January ... | 42.9 | 41.3 | 48.2 | 38.5 | 1.28 | 1.31 | 2.86 | 2.00 | 9 |
| February | 39·3 | 36.9 | 47·1 | 34·5 | 1.61 | 1.72 | 3·40 | 1.45 | 17 |
| March ... | 38.7 | 37·1 | 46.2 | 33·9 | 1.31 | 1.73 | 2.27 | 1.94 | 16 |
| April ... | 47·5 | 44· | 54·6 | 39·5 | 2.09 | 2.10 | 1.99 | 1.87 | 13 |
| May ... | 51.4 | 47·9 | 57·0 | 43·3 | 2.42 | 2.79 | 1.48 | 1.85 | 21 |
| June ... | 58.4 | 53·7 | 65·3 | 49· | 1·59 | 1.70 | 3·43 | 2.71 | 14 |
| July ... | 61.4 | 56.2 | 68.9 | 51.6 | 1.15 | 1.17 | .42 | 2.62 | 7 |
| August ... | 61.6 | 57·6 | 69.6 | 53·6 | 2.25 | 2.24 | 3·23 | 2.86 | 15 |
| September | 59·7 | 55·6 | 69. | 48.6 | .42 | ·43 | 2.69 | 2.44 | 4 |
| October ... | 52.2 | 50.2 | 58.7 | 47·3 | 2.56 | 2.76 | 1.02 | 2.56 | 19 |
| November | 43·5 | 42.3 | 49·6 | 39·4 | 2.34 | 2.38 | 2.09 | 1.82 | 20 |
| December | 45·1 | 42.8 | 50.1 | 40·3 | 1.98 | 1.99 | 3·17 | 1.87 | 19 |

Mr. Wilkinson, Chief Sanitary Inspector, submits the usual particulars relating to nuisances, slaughter houses, common lodging houses, canal boats, and the work in connection with the disposal of refuse, and conversion of privies, &c. The Borough Engineer has also supplied the usual information in reference to sewer construction, cleansing, &c., which is appended to this report on page 43.

# SANITARY INSPECTOR'S REPORT.

Tables relating to the work of the Inspectors of Nuisances are herewith appended, other particulars are added which it has not heretofore been possible to compile.

In the Table of Nuisances dealt with, it will be noticed that a much larger number of nuisances are recorded than appears to have been covered by the notices, but when it is remembered that the Inspectors direct and supervise all work of a sanitary nature which they come across, as well as work done on verbal requests, and report these as nuisances abated, the apparent discrepancy is accounted for.

## Ford Street Stables.

### ACCOUNT OF HORSES.

| | |
|---|---|
| Inspector's Department ... ... ... ... | 41 |
| Surveyor's Department ... ... ... ... | 28 |
| Fire Brigade and Police ... ... ... ... | 5 |
| Total number of Horses ... ... | 74 |

Bought during the year, 20. Disposed of 12.
Total number of horses at last Report, 66.

## Registered Slaughter Houses.

| | | |
|---|---|---|
| Places in use at commencement of the year ... ... ... | | 63 |
| License lapsed (premises pulled down) ... ... ... | | 1 |
| Visits of Inspection during the year ... ... ... ... | | 5,227 |
| Places in use at the close of the year:— | | |
| In the hands of private owners ... ... | 49 | |
| „ „ the Corporation ... ... | 14 | |
| Total ... ... | 63 | |
| Corporation Slaughter Houses untenanted ... ... | 9 | |
| Total number of Slaughter Houses in the Borough ... ... | | 72 |

## Privy and Ash-pit Cleansing.

| | | |
|---|---|---|
| Night-work.—Privies cleansed | ... ... ... ... ... | 7,640 |
| ,, Ash-pits cleansed (ashes only) | ... ... ... | 4,407 |
| ,, Privy Cesspools cleansed | ... ... ... | 1,035 |
| Day - work.—Dry Ash-pits cleansed | ... ... ... ... | 683 |
| Total | ... ... ... | 13,765 |

| | | |
|---|---|---|
| Night-work.—Loads of Soil (excreta only) | ... ... ... | 6,838 |
| ,, ,, Ashes and Excreta | ... ... ... | 3,940 |
| ,, ,, Ashes only | ... ... ... ... | 5,310 |
| Day - work.—Loads of Ashes | ... ... ... ... ... | 18,554 |
| Total | ... ... ... | 34,642 |

## Refuse Disposal.

Night-soil manure has been sold and delivered, as under:—

From Chester Depôt, 502 boat loads and 945 tons 16 cwts., and 1842 cart loads direct to Farmers just as collected from pits.

The new six-cell Destructor was put on ordinary firing on 14th November, 1898, and the old Manlove, Alliott, and Fryer Destructor stopped for re-construction, so that the powers for dealing with refuse are still restricted, and a considerable quantity has to be stored in the yard, and will entail increased expense before it can be got rid of.

## Contagious Diseases Animals Act.

The Markets and Fairs (Swine Fever) Order which was in force at the beginning of the year, continued in force until the 27th May, 1898, necessitating constant attendance in the Cattle Market, and the granting of licenses and supervision of slaughter as in the previous year. Since this date the Markets have been free, but as there are Orders and restrictions in force in the surrounding districts, considerable labour has been entailed in the granting of movement licenses, and following and keeping under observation animals which have been removed.

One outbreak of Swine Fever occurred on the 10th of August, at 24, Bloomfield Street, with 33 pigs on the premises. The outbreak was reported, by wire, to the Board of Agriculture, who took the case in hand. All live pigs were ordered to be slaughtered, and the premises cleared and disinfected.

## Food and Drugs Act.

Samples submitted to the Borough Analyst.

| Samples. | Articles. | Genuine. | Adulterated. |
|---|---|---|---|
| 4 | Brandy ... ... ... | 3 | 1 |
| 2 | Camphor ... ... ... | 2 | ... |
| 4 | Gin ... ... ... ... | 3 | 1 |
| 11 | Gregory's Powder ... ... | 9 | 2 |
| 2 | Iodine, Lin: of ... ... | 2 | ... |
| 2 | Lemon, Oil of ... ... | 2 | ... |
| 24 | Milk ... ... ... | 21 | 3 |
| 2 | Quinine, Wine of ... ... | 2 | ... |
| 4 | Rum... ... ... ... | 4 | ... |
| 4 | Whiskey ... ... ... | 4 | ... |
| 59 | | 52 | 7 |

11.086 % of the samples purchased were adulterated.

## Canal Boats' Acts.

| | |
|---|---|
| Visits of inspection paid ... ... ... ... ... | 88 |
| Boats inspected ... ... ... ... ... ... | 80 |

Infringements of the Acts and Regulations, 33.

Registration, 3; Absence of Certificate, 4; Absence of Marking, 4; Overcrowding, 4; Separation of Sexes, 2; Cleanliness, 3; Painting, 3; Provision of Water Cask, 2; Removal of Bilge Water, 1.

Boats found in a bad state of repair, 7.

Legal proceedings were taken in three instances, and fines imposed in each case.

Fourteen caution forms were sent to owners of boats, besides several letters.

| | |
|---|---|
| Number of boats on Derby Register ... ... ... | 43 |
| Number registered during 1898 ... ... ... ... | 1 |
| Number of boats eliminated from Register during 1898 | 12 |

## Common Lodging Houses.

During the year six applications have been made for Registration of houses or parts thereof. Two of these were refused, owing to the premises being unsuitable, but the remainder were granted.

The following buildings have been closed as Common Lodging Houses :—

| | | |
|---|---|---|
| 7, Bold Lane, | with accommodation for | 39 lodgers. |
| 27, ,, | ,, ,, ,, | 22 ,, |
| 7 & 8, East Street, | ,, ,, | 25½ ,, |
| 78, Bridge Gate, | ,, ,, | 16 ,, |

At the end of the year there were 12 Registered Houses, with 84 bed-rooms, and air space sufficient to provide sleeping room for 465 lodgers. Some keepers do not take advantage of the full number allowed, but apportion their beds to suit the convenience of their lodgers.

The houses have been regularly inspected; 612 visits being made by day, and 18 by night.

Infringements of bye-laws were detected—proceedings taken—and fines imposed in six instances.

One prosecution was instituted for keeping an un-registered Common Lodging House, but the case was dismissed on the ground that the Inspectors were not able to specifically prove that the lodgers paid nightly for their accommodation, although occupying common day and sleeping rooms.

## Bakehouses.

The year was commenced with 100 Bakehouses in use, and 37 not in use.

The following have been the alterations made :—

2 disused Bakehouses put into use.

2 new Bakehouses erected.

2 rooms added to existing Bakehouses for the purpose of mixing confectionery.

Seven Bakehouses have been demolished, or ovens taken out, and the buildings used for other purposes, leaving the record at the end of the year—100 Bakehouses in use, and 32 not in use.

Visits of inspection made, 788, of which one was at night, the Inspector having reason to think an occupier was employing a greater number of persons in his Bakehouse during the night than the law allowed.

In last year's report it was stated that the majority of the defects in Bakehouses had been remedied, this was, strictly speaking, correct at the time that report was issued, but, as the remedies were carried out in the early part of 1898, the details are included in the table of Nuisances abated during this year.

## Unsound Food.

### CONDEMNED AND DESTROYED.

| | |
|---:|---|
| 112 | lbs. of Beans (Kidney) |
| 2,254 | lbs. of Beef. |
| 336 | lbs. of Cabbage. |
| 151 | lbs. of Cherries. |
| 504 | lbs. of Cat Fish. |
| 565 | lbs. of Coal Fish. |
| 2,785 | lbs. of Cod Fish. |
| 210 | lbs. of Grayling. |
| 529 | lbs. of Haddock. |
| 112 | lbs. of Hake. |
| 1,260 | lbs. of Herrings. |
| 452 | lbs. of Ling. |
| 56 | lbs. of Liver. |
| 762 | lbs. of Mackerel. |
| 1,008 | lbs. of Mussels. |
| 63 | lbs. of Mutton. |
| 145 | lbs. of Plaice. |
| 30 | lbs. of Salmon. |
| 10 | lbs. of Shrimps. |
| 140 | lbs. of Whiting. |
| 15 | Crates of Bananas. |
| 2 | Bags of Cabbage (Red) |
| 2 | Boxes of Eggs. |
| 13 | Crabs. |
| 2 | Calves (weighing 144 lbs.) |
| 12 | Hares. |
| 23 | Pigs. |
| 192 | Rabbits. |

From this table it will be seen that taking the articles which have been weighed, the total reaches the figure of 5 tons, 3 cwts., 92 lbs. This result is due to a conscientious discharge of duty by the Inspector of Meat, Thomas Turner, and has been achieved with remarkably little friction.

## Police Court Proceedings.

| No. of Cases | Complaint. | Results. | Total Costs. £ | s. | d. |
|---|---|---|---|---|---|
| 1 | Keeping unregistered Common Lodging House ... | Dismissed ... ... | | | |
| 1 | Overcrowding bedroom of Common Lodging House | Fined 2/6 and Costs | 0 | 12 | 6 |
| 1 | Allowing two men to use one bed, in Common Lodging House ... ... | Fined 2/6 and Costs | 0 | 12 | 6 |
| 1 | Allowing Kitchen of Common Lodging House to be used as a sleeping apartment ... ... ... | Fined 2/6 and Costs | 0 | 12 | 6 |
| 1 | Allowing un-registered Boat to be used as a dwelling | Fined 5/- and Costs | 0 | 17 | 0 |
| 1 | Using un-registered Canal Boat as a dwelling ... | Fined 5/- and Costs | 0 | 17 | 0 |
| 1 | Allowing Canal Boat to be used whilst in a dilapidated condition, and without water cask ... ... | Fined 10/- and Costs | 0 | 18 | 6 |
| 1 | Not complying with Order to convert privies to Water Closets ... ... ... | Ordered to abate Nuisance and pay costs | 0 | 17 | 6 |
| 1 | Patient exposing herself whilst suffering from Scarlet Fever ... ... ... | Fined 10/- ... ... | 0 | 10 | 0 |
| 1 | Selling adulterated Brandy | Fined 20/- and Costs | 1 | 19 | 0 |
| 1 | ,, ,, Gin ... | Fined 20/- and Costs | 1 | 18 | 0 |
| 1 | ,, ,, Milk | Fined 1/- and Costs | 0 | 19 | 0 |
| 1 | ,, ,, Milk | Fined 1/- and Costs | 1 | 1 | 0 |
| 1 | ,, ,, Milk | Fined 5/- and Costs | 1 | 4 | 0 |

ROYAL STATISTICAL SOCIETY
- JUN. 99

## NUISANCES

### NOTICES SERVED.

| | |
|---|---|
| To Cleanse and Repair foul Privies ... ... ... ... | 63 |
| ,, ,, ,, Drains ... ... ... ... | 267 |
| ,, ,, Foul Soft Water Cisterns ... ... ... ... | 18 |
| ,, ,, Dirty Houses ... ... ... ... ... ... | 32 |
| ,, ,, ,, Slaughter Houses ... ... ... ... | 9 |
| ,, ,, ,, Passages or Yards ... ... ... ... | 3 |
| ,, ,, ,, Cellars ... ... ... ... ... ... | 6 |
| ,, Cleanse and Repair Bakehouses ... ... ... ... | 76 |
| ,, Disconnect Sink Drains ... ... ... ... ... | 2 |
| ,, Lay in new Drains and replace Brick Drains ... ... ... | 29 |
| ,, Trap Drain Inlets ... ... ... ... ... ... | 73 |
| ,, Lay on Town Water ... ... ... ... ... ... | 1 |
| ,, ,, ,, to W.C.'s ... ... ... ... ... | 2 |
| ,, Discontinue Boiling Offal ... ... ... ... ... | 4 |
| ,, Provide extra W.C. Accommodation ... ... ... ... | 7 |
| ,, Convert Privies to W.C.'s ... ... ... ... ... | 129 |
| ,, Remove Accumulations of Manure ... ... ... ... | 24 |
| ,, ,, Animals, Fowls, &c. ... ... ... ... ... | 34 |
| ,, ,, Ash-pits ... ... ... ... ... ... | 5 |
| ,, ,, Manure Pits and Cesspools ... ... ... ... | 2 |
| ,, ,, Stale Swill ... ... ... ... ... ... | 0 |
| ,, ,, Stagnant Water ... ... ... ... ... | 2 |
| ,, ,, Soil Pipes from inside of Houses ... ... ... | 3 |
| ,, ,, Drains from ditto ... ... ... ... ... | 21 |
| ,, ,, Urinals ... ... ... ... ... ... ... | 0 |
| ,, Ventilate W.C.'s, Soil Pipes, and Drains ... ... ... | 6 |
| ,, Erect Urinals ... ... ... ... ... ... ... | 2 |
| ,, Lay in Damp Courses to Houses ... ... ... ... | 11 |
| ,, Repair Defective Spouting ... ... ... ... ... | 63 |
| ,, ,, ,, Roofs ... ... ... ... ... | 20 |
| ,, ,, ,, House Floors, &c. ... ... ... ... | 11 |
| ,, ,, ,, Paving of Yards and Passages ... ... | 38 |
| ,, ,, ,, W.C.'s and Urinal Fittings ... ... ... | 39 |
| ,, ,, ,, Ashes and Manure Pits ... ... ... | 3 |
| ,, ,, Dangerous Cellar Coverings ... ... ... ... | 5 |
| ,,, ,, , Walls and Buildings ... ... ... | 0 |
| ,, Fill in disused Wells ... ... ... ... ... ... | 9 |
| ,, Ventilate Rooms ... ... ... ... ... ... | 2 |
| ,, Abate Smoke Nuisance ... ... ... ... ... ... | 5 |
| ,, Relay Defective Drains ... ... ... ... ... | 107 |
| ,, Provide Ash-boxes ... ... ... ... ... ... | 11 |
| ,, Prevent overcrowding ... ... ... ... ... ... | 19 |
| ,, Insufficient Water Supply ... ... ... ... ... | 4 |
| ,, Not Complying with Common Lodging House Bye Laws ... | 41 |
| ,, ,, ,, ,, Dairies, Cowsheds, and Milk Shops Regulations ... ... ... ... ... ... ... | 59 |
| ,, Workshop overcrowded ... ... ... ... ... ... | 1 |
| ,, ,, in a Dirty State ... ... .. ... ... | 1 |
| ,, Repair Dangerous Covers to Wells ... ... ... ... | 0 |
| Total ... ... ... | 1269 |

## DEALT WITH.

## RESULTS OF NOTICES.

| | |
|---|---|
| Privies Cleansed and Repaired | 241 |
| Drains ,, ,, | 1254 |
| Soft Water Cisterns Cleansed | 100 |
| Dirty Houses ,, | 59 |
| ,, Slaughter Houses ,, | 12 |
| ,, Passages or Yards ,, | 3 |
| ,, Cellars ,, | 142 |
| Bakehouses Cleansed and Repaired | 113 |
| Sink Drains Disconnected | 15 |
| New Drains laid in and Brick Drains replaced | 685 |
| Drain inlets trapped | 1005 |
| Town Water laid on | 10 |
| ,, ,, to W.C.'s | 14 |
| Offal Boiling Discontinued | 2 |
| Extra W.C.'s provided | 18 |
| Privies converted to W.C.'s | 234 |
| Accumulations of Manure removed | 53 |
| Animals, Fowls, &c. ,, | 38 |
| Ash-pits Removed | 69 |
| Manure Pits and Cesspools ,, | 66 |
| Stale Swill ,, | 1 |
| Stagnant Water ,, | 0 |
| Soil Pipes removed from inside Houses | 7 |
| Drains removed ,, ,, | 113 |
| Urinals removed | 5 |
| W.C.'s, Soil Pipes, and Drains ventilated | 129 |
| Urinals Erected | 8 |
| Damp Houses repaired and Damp Courses laid in | 17 |
| Defective Spouting repaired | 415 |
| ,, Roofs ,, | 125 |
| ,, Floors, &c. ,, | 76 |
| ,, Paving of Yards and Passages repaired | 630 |
| ,, W.C.'s and Urinal Fittings repaired | 118 |
| ,, Ashes and Manure Pits repaired | 14 |
| Dangerous Cellar Coverings repaired | 8 |
| ,, Walls and Buildings ,, | 5 |
| Disused Wells Filled in | 28 |
| Rooms Ventilated | 1 |
| Smoke Nuisances abated | 8 |
| Defective Drains relaid | 559 |
| Ash-boxes provided | 48 |
| Overcrowding prevented | 18 |
| Water Supplies increased | 10 |
| Common Lodging Houses Bye Laws complied with | 55 |
| Dairies, Cowsheds, and Milk Shops Regulations complied with | 35 |
| Overcrowing of Workshops prevented | 0 |
| Workshops Cleansed | 0 |
| Dangerous Covers to Wells repaired | 3 |
| Total | 6569 |

## Dairies, Cowsheds, and Milkshops.

With respect to Dairies, there are none within the Borough which are not also Milkshops from which milk is sold by retail.

The whole of the cowsheds have been thoroughly inspected, sketches made of the sheds and their dimensions, and particulars noted as to water supply and drainage. In calculating the cubical contents, the height has been taken to 14 feet, and the following statement shows the comparative sizes :—

| | | | | | |
|---|---|---|---|---|---|
| 3 | sheds have | 800 | cubic | feet of space | per head. |
| 3 | ,, | 700 | ,, | ,, | ,, |
| 6 | ,, | 600 | ,, | ,, | ,, |
| 3 | ,, | 500 | ,, | ,, | ,, |
| 7 | ,, | 400 | ,, | ,, | ,, |
| 6 | ,, | 300 | ,, | ,, | ,, |
| 2 | ,, | 200 | ,, | ,, | ,, |

Some of these places are now altered, and others are in progress of alteration or abolition, so that the whole may be brought into closer agreement with the new Regulations and requirements.

On December 31st, 1898, there were registered within the Borough, 224 milkshops, and 30 cowsheds, also 29 purveyors of milk who were non-resident.

W. WILKINSON,

Chief Sanitary Inspector.

# BOROUGH ENGINEER'S REPORT.

## SEWERS NEWLY LAID DURING 1898.

| | |
|---|---|
| Almond Street ... | 9″ & 12″ |
| Arnold Street ... | 12″ |
| Becket Street (extension) | 9″ |
| Belvoir Street ... | 9″ & 12″ |
| Chatsworth Street ... | 9″ & 12″ |
| Clarence Street ... | 18″ |
| Camp Street ... | 9″ & 12″ |
| Farm St. (extension) | 12″ |
| Haddon Street ... | 9″ & 12″ |
| Holcombe St. (extension) ... ... | 9″ & 12″ |
| Howe Street ... | 12″ |
| Leacroft Road (extension) ... ... | 9″ |
| Lloyd Street ... | 9″ |
| Marcus Street ... | 9″ |
| Meynell Street ... | 9 & 12″ |
| Olivier Street ... | 9″ |
| Porter Road ... | 15″ |
| Reeves Meadow Street | 9″ |
| Rutland St. (extension) | 9″ |
| South Drive ... | 12″ |
| Stanton Street ... | 9″ & 12″ |
| Sun Street ... ... | 12″ |
| Thorn Street ... | 9″ |
| Vicarage Avenue ... | 12″ |
| West Drive ... ... | 12″ |
| Whitaker Lane (outfall Sewer) ... | 12″ |
| Woolrych Street ... | 12″ |
| Young Street ... | 9″ |

## MANHOLES CONSTRUCTED DURING 1898.

| | |
|---|---|
| Almond Street ... ... | 3 |
| Arnold Street ... ... | 2 |
| Belper Road ... ... | 1 |
| Belvoir Street ... ... | 1 |
| Boyer Street ... ... | 1 |
| Cambridge Street ... ... | 2 |
| Camp Street ... ... | 2 |
| Chatsworth Street ... ... | 2 |
| Chester Green Road ... | 1 |
| Clarence Street ... ... | 5 |
| Cotton Lane (into brook course) ... ... ... | 4 |
| Duffield Road ... ... | 1 |
| Farm Street (extension) ... | 2 |
| Graham Street ... ... | 2 |
| Haddon Street ... ... | 1 |
| Holcombe Street (extension) | 4 |
| Holcombe Street—extension (into brook course) ... | 2 |
| Howe Street ... ... | 2 |
| Leacroft Road (extension) | 1 |
| Marcus Street ... ... | 2 |
| Meynell Street ... ... | 1 |
| Mundy Street ... ... | 1 |
| Old Chester Road ... ... | 1 |
| Olivier Street ... ... | 1 |
| Pear Tree Road (into brook course) ... ... ... | 1 |
| Porter Road ... ... | 10 |
| Reeves Meadow Street ... | 2 |
| Russell Street ... ... | 3 |
| St. Thomas' Road (into brook course) ... ... ... | 1 |
| South Drive ... ... | 2 |
| Stanton Street ... ... | 1 |
| Slack Lane ... ... ... | 2 |
| Vicarage Avenue ... ... | 4 |
| West Drive ... ... ... | 1 |
| Whitaker Lane (outfall sewer) | 1 |
| Woods Lane ... ... | 4 |
| Woods Lane (into brook course ... ... ... | 2 |
| Woolrych Street ... ... | 2 |
| Total ... | 81 |

## SEWERS CLEANED DURING 1898.

| | Loads. |
|---|---|
| Bath Street | 18 |
| Bridge Gate | 17 |
| Burton Road | 14 |
| Bold Lane | 6 |
| City Road | 3 |
| Faire Street | 1 |
| Ford Street Yard | 1 |
| Graham Street | 13 |
| Holcombe Street | 67 |
| London Road | 3 |
| Mansfield Road | 1 |
| Normanton Road | 1 |
| Nottingham Road | 4 |
| Osmaston Road | 1 |
| Parliament Street | 5 |
| Russell Street | 32 |
| Sadler Gate | 19 |
| St. James' Road | 2 |
| Shaftesbury Street | 5 |
| Slack Lane | 16 |
| Twyford Street | 1 |
| Willow Row | 19 |
| Wind Mill Hill Lane | 2 |
| Total | 251 |

**Markeaton Brook ... ... ... ... 362 Cart Loads.**

**Markeaton Brook ... ... ... ... 35 Boat Loads.**

## MANHOLES CLEANED DURING 1898.

| | Loads. |
|---|---|
| Bath Street | 2 |
| Castle Street | 1 |
| Over Borough | 18 |
| Shaftesbury Cresent | 1 |
| Siddals Road | 1 |
| Slack Lane | 1 |
| Watson Street | 1 |
| Total | 25 |

## WATER USED DURING 1898.

| | Gallons. |
|---|---|
| Sewer Flushing | 6,960,867 |
| Street Watering | 8,064,180 |
| Steam Roller | 746,170 |
| Cabstands, Bridges, Wood Paving, &c. | 591,715 |
| Total | 16,362,932 |

Disinfecting Powder used during 1898 ... 6 Tons.
Disinfecting Fluid used during 1898 ... 480 Gallons.

JOHN WARD,
Borough Surveyor.

**APPENDIX A.**

Table of Deaths during the Year 1898, in the County Borough of Derby, classified according to Diseases, Ages, and Localities.

|  | MORTALITY FROM ALL CAUSES AT SUBJOINING AGES. |  |  |  |  |  |  |  | Mortality from Subjoined Causes, Distinguishing Deaths of Children under Five Years of Age. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|  |  |  |  |  |  |  |  |  |  |  |  |  | FEVERS. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AT ALL AGES. | Under 1 Year. | 1 and under 5 | 5 and under 15 | 15 and under 25 | 25 and under 65 | 65 and upwards |  | Small Pox. | Scarlatina. | Diphtheria. | Membranous Croup. | Typhus. | Enteric or Typhoid. | Continued | Relapsing. | Puerperal | Cholera. | Erysipelas. | Measles. | Whooping Cough. | Diarrhoea and Dysentery. | Rheumatic Fever. | Phthisis. | Bronchitis, Pneumonia, and Pleurisy. | Heart Disease. | Influenza. | Injuries. | All other Causes. | TOTAL. |
| Arboretum ... ... | 241 | 89 | 36 | 7 | 6 | 64 | 39 | Under 5 |  | 2 | 1 |  |  |  |  |  |  |  |  | 4 | 5 | 12 |  | 2 | 15 |  | 3 | 1 | 79 | 124 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  | 2 |  |  | 1 |  |  | 1 |  | ... |  | 9 | 12 | 17 | 7 |  | 68 | 117 |
| Babington ... ... | 193 | 53 | 19 | 8 | 8 | 55 | 50 | Under 5 |  | 1 |  |  |  |  |  |  |  |  |  | 8 | 3 | 4 |  |  | 11 |  |  |  | 45 | 72 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 1 |  |  |  | 1 |  |  |  |  |  | 2 |  | 1 | 2 | 11 | 16 | 23 | 5 | 1 | 58 | 121 |
| Becket ... ... | 290 | 91 | 29 | 7 | 14 | 96 | 53 | Under 5 |  |  | 1 |  |  |  |  |  |  |  | 1 | 3 | 2 | 21 |  | 1 | 21 |  | 2 | 1 | 68 | 121 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  | 4 |  |  | 1 |  |  |  |  | 3 |  | 24 | 30 | 30 | 2 | 3 | 72 | 169 |
| Castle ... ... | 182 | 62 | 31 | 7 | 4 | 54 | 24 | Under 5 |  | 2 |  |  |  |  |  |  |  |  |  | 10 | 9 | 14 |  |  | 10 |  |  | 1 | 47 | 93 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  | 1 |  |  | 3 |  |  |  |  | 1 |  | 12 | 12 | 15 | 1 |  | 44 | 89 |
| Derwent ... ... | 114 | 44 | 8 | ... | 4 | 42 | 16 | Under 5 |  |  |  |  |  |  |  |  |  |  |  | 3 | 1 | 6 |  |  | 9 |  |  |  | 33 | 52 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  | 1 |  |  |  |  | 1 |  | 6 | 13 | 10 |  |  | 31 | 62 |
| Friargate ... ... | 150 | 41 | 23 | 6 | 7 | 42 | 31 | Under 5 |  |  |  |  |  |  |  |  |  |  |  | 4 | 1 | 4 |  |  | 11 |  | 1 |  | 42 | 63 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 1 |  |  |  | 1 |  |  |  |  |  |  |  |  | 1 | 11 | 11 | 11 | 1 |  | 49 | 86 |
| King's Mead ... | 265 | 80 | 46 | 9 | 14 | 66 | 50 | Under 5 |  | 1 | 1 |  |  |  |  |  |  |  |  | 12 | 6 | 19 |  | 2 | 21 |  |  | 1 | 64 | 127 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 2 | 1 |  |  | 2 |  |  |  |  |  | 1 |  | 3 | 1 | 21 | 15 | 20 | 1 | 2 | 70 | 139 |
| Litchurch ... .. | 85 | 14 | 10 | 6 | 5 | 32 | 18 | Under 5 |  | 1 |  |  |  |  |  |  |  |  |  | 4 |  | 2 |  |  | 3 |  | 1 |  | 13 | 24 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  | 2 |  |  | 1 |  | 1 |  |  |  |  | 7 | 8 | 8 | 2 | 1 | 31 | 61 |
| Royal Infirmary ... | 161 | 6 | 14 | 15 | 14 | 98 | 14 | Under 5 |  | 3 | 4 |  |  |  |  |  |  |  |  |  |  | 1 |  | 1 |  |  |  | 5 | 6 | 20 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 1 | 1 |  |  | 14 |  |  | 1 |  | 1 |  |  |  | 1 | 8 | 5 | 19 |  | 22 | 68 | 141 |
| Workhouse ... ... | 93 | 1 | 4 | ... | 6 | 34 | 48 | Under 5 |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  |  |  |  |  |  | 3 | 5 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  | 1 |  |  |  |  |  |  |  | 4 |  | 12 | 8 | 12 |  |  | 51 | 88 |
| Borough Asylum .. | 25 | ... | .. | 1 | 1 | 19 | 4 | Under 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2 | 6 |  |  | 12 | 25 |
| Children's Hospital | 19 | 3 | 9 | 7 |  | ... | ... | Under 5 |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  | 1 |  | 1 | 9 | 12 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  | 2 | 4 | 7 |
| Isolation Hospital... | 5 | .. | 5 | ... | . . | ... | ... | Under 5 |  | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| H. M. Prison ... | 5 | ... | ... | ... | 1 | 3 | 1 | Under 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  | 4 | 5 |
| Sudden Deaths in Streets of Strangers | 2 | ... | ... | ... | ... | 1 | 1 | Under 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 5 upwds. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  |  | 2 |
| TOTALS ... | 1830 | 484 | 234 | 73 | 84 | 606 | 249 | Under 5 |  | 15 | 7 |  |  |  |  |  |  |  | 1 | 49 | 28 | 84 |  | 6 | 101 | 1 | 6 | 11 | 409 | 718 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 5 | 2 |  |  | 28 |  |  | 8 |  | 2 | 4 |  | 13 | 5 | 127 | 133 | 173 | 19 | 31 | 562 | 1,112 |
| Deaths occuring within the District among persons not belonging thereto ... | 74 | 4 | 4 | 9 | 5 | 49 | 3 | Under 5 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  | 1 |  |  |  | 2 | 4 | 8 |
|  |  |  |  |  |  |  |  | 5 upwds. |  | 1 |  |  |  | 4 |  |  | 1 |  |  |  |  |  | 1 | 4 | 4 | 12 |  | 10 | 29 | 66 |

**APPENDIX B.**

# Table of Population, Births, and of New Cases of Infectious Sickness,

coming to the knowledge of the Medical Officer of Health, during the year 1898, in the Borough of Derby Urban District; classified according to DISEASES, AGES, and LOCALITIES.

| WARDS, &c. | Population at all Ages. Last Census. | Population at all Ages. Estimated to middle of 1898. | Registered Births. | Aged under 5 or over 5. | New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health. 1 Smallpox. | 2 Scarlatina. | 3 Diphtheria | 4 Membranous Croup. | 5 Fevers. Typhus. | 6 Fevers. Enteric or Typhoid. | 7 Fevers. Continued | 8 Fevers. Relapsing | 9 Fevers. Puerperal | 10 Cholera | 11 Erysipelas. | 12 | 13 | Number of such Cases Removed from their Homes in the several Localities for Treatment in Isolation Hospital. 1 Smallpox. | 2 Scarlatina. | 3 Diphtheria | 4 Membranous Croup. | 5 Fevers. Typhus. | 6 Fevers. Enteric or Typhoid. | 7 Fevers. Continued | 8 Fevers. Relapsing | 9 Fevers. Puerperal | 10 Cholera. | 11 Erysipelas. | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arboretum ... | 15,352 | 19,765 | ..... | Under 5 | | 32 | 6 | | | 1 | | | ... | | | | | | 16 | 1 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 62 | 14 | | | 28 | | | 1 | | | | | | 33 | 1 | | | 16 | | | | | | | |
| Babington ... | 11,386 | 12,688 | ..... | Under 5 | | 21 | 7 | | | ... | | | .. | | | | | | 11 | 3 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 46 | 9 | | | 15 | | | ... | | | | | | 32 | 1 | | | 7 | | | | | | | |
| Becket ... | 17,460 | 20,434 | ..... | Under 5 | | 16 | 3 | | | ... | | | ... | | | | | | 10 | 2 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 35 | 3 | | | 32 | | | 1 | | | | | | 26 | ... | | | 19 | | | | | | | |
| Castle ... | 10,914 | 10,468 | ..... | Under 5 | | 12 | 4 | | | ... | | | .. | | | | | | 9 | ... | | | 1 | | | | | | | |
| | | | | 5 upwds. | | 33 | 3 | | | 15 | | | 2 | | | | | | 32 | ... | | | 11 | | | | | | | |
| Derwent ... | 5,666 | 5,780 | ..... | Under 5 | | 2 | 2 | | | ... | | | ... | | | | | | ... | 1 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 11 | 1 | | | 4 | | | ... | | | | | | 10 | 1 | | | 3 | | | | | | | |
| Friargate ... | 12,251 | 14,500 | ..... | Under 5 | | 22 | 4 | | | ... | | | ... | | | | | | 16 | 2 | | | ... | | | | | | | |
| | | | | 5 upwds | | 52 | 4 | | | 10 | | | 1 | | | | | | 40 | 1 | | | 3 | | | | | | | |
| King's Mead ... | 13,078 | 13,494 | ..... | Under 5 | | 33 | 5 | | | 2 | | | ... | | | | | | 16 | 1 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 66 | 3 | | | 24 | | | ... | | | | | | 45 | 1 | | | 18 | | | | | | | |
| Litchurch ... | 8,039 | 7,705 | ..... | Under 5 | | 9 | . | | | 1 | | | ... | | | | | | 5 | ... | | | ... | | | | | | | |
| | | | | 5 upwds. | | 10 | ... | | | 11 | | | 1 | | | | | | 10 | ... | | | 4 | | | | | | | |
| Royal Infirmary ... | ... | ... | | Under 5 | | 2 | 3 | | | ... | | | ... | | | | | | 2 | 3 | | | ... | | | | | | | |
| | | | | 5 upwds. | | 6 | 3 | | | 15 | | | .. | | | | | | 6 | 3 | | | 15 | | | | | | | |
| Children's Hospital | ... | ... | ..... | Under 5 | | 2 | ... | | | ... | | | ... | | | | | | 2 | ... | | | ... | | | | | | | |
| | | | | 5 upwds. | | 4 | .. | | | ... | | | ... | | | | | | 4 | ... | | | ... | | | | | | | |
| Other Institutions | ... | ... | ..... | Under 5 | | .. | ... | | | ... | | | ... | | | | | | ... | ... | | | ... | | | | | | | |
| | | | | 5 upwds | | 5 | . | | | 1 | | | ... | | | | | | 5 | ... | | | 1 | | | | | | | |
| TOTALS ... | 94,146 | 104,834 | 2860 | Under 5 | | 151 | 34 | | | 4 | | | ... | | | | | | 87 | 13 | | | 1 | | | | | | | |
| | | | | 5 upwds. | | 330 | 40 | | | 155 | | | 6 | | | | | | 243 | 8 | | | 97 | | | | | | | |

# Report

UPON THE

# Prevalence of Tubercular Diseases

IN THE

# Borough of Derby,

AND SUGGESTED PREVENTIVE MEASURES,

BY

WILLIAM J. HOWARTH, M.D., D.P.H.,

MEDICAL OFFICER OF HEALTH,

AND

MEDICAL SUPERINTENDENT OF THE BOROUGH
ISOLATION HOSPITAL.

Presented to the Sanitary Committee on March 20th, 1899,
and ordered to be printed.

DERBY:
RICHARD KEENE, LIMITED, PRINTERS, IRON GATE.

TO THE

## Chairman and Members of the Sanitary Committee.

Gentlemen,

On February 6th, 1899, in accordance with instructions, I presented to the Sanitary Committee a Report upon Tuberculosis. This report consisted chiefly of recognised facts bearing upon Tuberculosis. A further report was asked for with respect to the practicability of certain suggested preventive measures. About that time His Worship the Mayor, and the Chairman of the Sanitary Committee (Mr. Alderman Harrison), had decided to take a health trip abroad, and considered that a most profitable combination of health and education might result from visiting a few of the Sanatoria which exist in various parts of the Continent for the Open Air Treatment of Phthisis. Your Medical Officer was instructed to accompany them and report upon the suitability of such institutions for preventive purposes from a Sanitary Authority's point of view. This report embodies the details presented to the Committee on February 6th, 1899, with the addition of certain statistical information, and the later particulars required by the Committee.

I am, Gentlemen,
Yours obediently,
WILLIAM J HOWARTH,
Medical Officer of Health.

# REPORT UPON THE PREVALENCE OF TUBERCULAR DISEASES IN THE BOROUGH OF DERBY, AND SUGGESTED PREVENTIVE MEASURES.

*Definition.*—Tuberculosis is a chronic infective disease produced by a parasitic micro-organism, the Bacillus Tuberculosis. This organism is not a saprophyte, that is, it does not flourish on dead organic matter, but under certain favourable conditions and by adopting many precautions it may with difficulty be cultivated as a saprophyte. It finds conditions most conformable to its existence in the products of tuberculous degeneration. This is important from a preventive point of view, as the organism tends to become limited to the neighbourhood of places inhabited by consumptives, and in the case of cattle to the byres. The organism (or its spores) has considerable tenacity of vitality under certain circumstances, virulence having been demonstrated in dried sputum kept under favourable conditions even after so long a period as forty days.

*Clinical Varieties of the Disease.*—Much confusion has arisen owing to the lax use of the words tuberculosis or consumption. To many people it conveys the idea of a more or less rapid wasting disease due to tuberculosis of the lungs or phthisis, but the disease is met with in nearly every organ of the body, hardly any being excepted, and though tuberculosis of the lung known as phthisis or consumption is perhaps the commonest form of the disease, still tuberculosis of the alimentary tract, peritoneum, and mesenteric glands, known as consumption of the bowels and tabes mesenterica, are common types. "Water in the head" is a chronic form of tubercular disease of the meninges of the brain, abscesses in various parts of the body, most frequently noticed in the neck, are due to tuberculosis of the lymphatic glands, whilst lupus, and diseases of joints and bones—not the result of accident—are in children and young persons frequently the result of the ravages of the tubercle bacillus. These examples are sufficient to demonstrate the variable and diverse manner in which this disease exhibits itself in the human body.

*Predisposing Causes of Tuberculosis.—I. Heredity.*—Inherited tuberculosis (if it really exists) is much rarer than was once supposed, though it is possible that the offspring of tuberculous parents are born with a condition of the system less able to resist the attacks of the tubercle bacillus, but even the predisposition, I am of opinion, may be overcome by well regulated rules of life, and such children if reared under favourable hygienic conditions may be rendered proof against the disease.

*II. Surroundings.*—Probably the most potent factor in assisting tubercular infection is due to that condition of the body which results from the constant inhalation of re-breathed air; such conditions exist in crowded houses and courts, and crowded and ill-ventilated work-rooms, &c. Compared with the other large towns in the country there does not exist in Derby any very considerable overcrowding in the houses, though a few well circumscribed areas show overcrowding of site (see site), but the overcrowded sites contain the majority of the overcrowded houses. In addition to predisposing the system to attacks of the disease, overcrowding presents as a rule, conditions either in the houses or on the site, which are favourable to the prolonged vitality of the infection with attendant increased risks. A house is regarded as overcrowded when there are more than two persons per room living in it, thus a four-roomed house would be overcrowded with nine occupants. The proportion living in such an overcrowded state in Derby at the 1891 census was 2.69 per cent. of the inhabitants; Portsmouth, 1.74 per cent., and Leicester 2.22 per cent., being the only two large towns with a less percentage. London had 19.7 per cent., and England and Wales as a whole 11.23 per cent.

*III. Employment.*—In addition to the insanitary conditions of workrooms, employment in which irritating dust is produced is an important factor in predisposing to the disease, as also are those occupations which are sedentary in character, or which necessitate cramped positions of the body, or much exposure to the extremes of weather. Out of 460 occupations of male phthisical persons which are given in the death returns, the following stand out prominently:—

| | |
|---|---|
| Bakers | 4 |
| Blacksmiths | 6 |
| Bootmakers | 22 |
| Bricklayers | 6 |
| Clerks | 35 |
| Coachmen and Grooms | 7 |
| Compositors and Printers | 13 |
| Engineers | 7 |
| Fitters | 23 |
| Innkeepers | 14 |
| Joiners and Sawyers | 14 |
| Labourers | 89 |
| Stone Masons | 17 |
| Moulders, Puddlers, and other Iron workers | 22 |
| Painters | 12 |
| Tailors | 9 |

*IV. Previous attacks of Disease* of the lungs or other organs such as Pneumonia, or injuries to bones or joints.

*V. Site.*—The disease in many instances shows an undoubted preference for certain areas and sites in large towns, especially where houses are crowded on sites, and in consequence badly lighted and in many cases damp. This is distinctly shown in two areas which have been selected for comparison with the rest of the town. The average incidence per house of 1086 deaths is used as the basis of comparison. Of course such figures have no real significance except for comparative purposes and probably the comparison is under rather than over-stated to the advantage of the areas chosen. The areas of the two districts are included within the following streets: *1st District.*—Whitecross Street, Bridge Street, King Street, Queen Street, Walker Lane, Willow Row, Brook Walk and Brook Street. *2nd District.*—Monk Street, Stockbrook Street, Bedford Street, and Drewry Lane.

The following table shows the proportion of deaths to houses :—

| | | Deaths. | | Houses. |
|---|---|---|---|---|
| 1. | For the whole town, including the two areas | 1 | to | 20 |
| 2. | For the whole town, excluding the two areas | 1 | to | 34 |
| 3. | For the first area ... ... ... ... | 1 | to | 10 |
| 4. | For the second ... ... ... ... | 1 | to | 15 |

This shows that the phthisis cases are more than three times as prevalent in the first area and more than twice as prevalent in the second area as in the rest of the town. Other smaller areas might have been added, but the above are sufficient to show that arrangements and circumstances in connection with site have an important bearing upon phthisis mortality.

### *VI. Intemperance.*

*Prevalence.*—The disease is natural in most animals and birds kept in captivity, or domesticated, and in the human race the inhabitants of the colder northern latitudes contribute by far the greater number of deaths from this disease. The following table give the deaths which have occurred from tubercular diseases in the town of Derby during the last twenty-one years. It shows that tubercular diseases in which are included Tabes Mesenterica, Tubercular Meningitis, Phthisis, Scrofula, and other tuberculoses caused 3,774 deaths, or nearly 11% of the total deaths in that period, and represents a death rate of little short of 2 per 1,000 living. Tuberculosis is a *preventable* disease, and being so, a loss of nearly 4,000 lives in 21 years, an average of nearly 180 a year, and a large number of these of wage earning years, demands some investigation as to the practicability of the means at our disposal for preventing it, and what possibility or hope there may be of success.

*Deaths from Tubercular Diseases in the Borough of Derby from 1878 to 1898, with percentage of deaths to total deaths, and death rates from Tubercular Diseases per 1,000 living in each Year.*

| YEAR. | Population. | DEATHS FROM |  |  |  | Total of Deaths from foregoing. | Total Deaths for the Year. | Percentage of Deaths to total Deaths. | Death rate from Tubercular Disease per 1000 living. |
|---|---|---|---|---|---|---|---|---|---|
|  |  | Tabes Mesenterica. | Tubercular Meningitis. | Phthisis. | Scrofula. Tuberculosis. |  |  |  |  |
| 1878 | 78.905 | 26 | ... | 162 | 12 | 200 | 1637 | 12.21 | 2.54 |
| 1879 | 79.605 | 18 | ... | 147 | 12 | 177 | 1987 | 8.90 | 2.22 |
| 1880 | 80.385 | 36 | ... | 140 | 4 | 180 | 1614 | 11.15 | 2.23 |
| 1881 | 81.171 | 21 | ... | 131 | 9 | 161 | 1560 | 10.32 | 1.98 |
| 1882 | 82.687 | 28 | ... | 140 | 13 | 181 | 1566 | 11.55 | 2.18 |
| 1883 | 83.922 | 23 | 2 | 146 | 11 | 182 | 1558 | 11.68 | 2.16 |
| 1884 | 85.176 | 37 | 9 | 131 | 15 | 192 | 1605 | 11.96 | 2.25 |
| 1885 | 86.449 | 24 | 15 | 128 | 25 | 192 | 1620 | 11.85 | 2.22 |
| 1886 | 87.741 | 25 | 13 | 154 | 12 | 204 | 1677 | 12.16 | 2 32 |
| 1887 | 89.052 | 25 | 18 | 146 | 12 | 201 | 1605 | 12.52 | 2.25 |
| 1888 | 90.383 | 18 | 7 | 116 | 17 | 158 | 1574 | 10.03 | 1.73 |
| 1889 | 91.733 | 20 | 10 | 99 | 20 | 149 | 1614 | 9.23 | 1.62 |
| 1890 | 93.105 | 25 | 13 | 143 | 25 | 206 | 1874 | 10.99 | 2.21 |
| 1891 | 94.141 | 15 | 11 | 139 | 16 | 181 | 1792 | 10.10 | 1.92 |
| 1892 | 95.908 | 22 | 10 | 140 | 23 | 195 | 1765 | 11.04 | 2.03 |
| 1893 | 97.341 | 25 | 11 | 132 | 17 | 185 | 1772 | 10.44 | 1.90 |
| 1894 | 98.795 | 19 | 8 | 103 | 20 | 150 | 1490 | 10.06 | 1.51 |
| 1895 | 100.272 | 31 | 8 | 105 | 19 | 163 | 1698 | 9.59 | 1.62 |
| 1896 | 101.770 | 23 | 10 | 137 | 16 | 186 | 1620 | 11.48 | 1.82 |
| 1897 | 103.291 | 21 | 15 | 99 | 15 | 150 | 1720 | 8.72 | 1.44 |
| 1898 | 104.834 | 12 | 14 | 133 | 22 | 181 | 1830 | 9.89 | 1.72 |
| Totals |  | 494 | 174 | 2771 | 335 | 3774 | 35178 | 10.72 | 1.96 |
|  |  |  |  |  |  |  |  | Means. |  |

The information gleaned from this table has an encouraging and hopeful aspect. During the period reviewed sanitary matters in the town have undergone a distinct improvement, and the favourable position which Derby has long held among the great towns with respect to its death rate has only been maintained by means of well considered Sanitary reforms. That the energy of the Committee in this direction has not been futile will be seen from the fact that the death rate has fallen from an average of 20.26 for the 5 years 1878-82, to an average of 16.4 for the 5 years 1894-8. This is a reduction of 19 per cent., and the mortality from tubercular diseases has assisted most materially in bringing about this reduction. During the 5 years 1878-82 tubercular diseases caused 899 deaths, as against 830 deaths in 1894-8. These numbers compared on the basis of populations during these periods show a reduction in mortality from tubercular diseases of no less than 22.5 per cent. Expressed differently, the figures show that if the mortality from tubercular diseases during the last five years had been the same as during the five years, 1878-82, then 1,108 deaths would have been recorded as against an actual 830, or an actual saving in five years of 278 lives. A glance at the "death-rate" column will show that this decrease in the mortality has not been regular and progressive, but it is none the less quite certain. This reduction is a very hopeful sign, and by appropriate measures it is not either impossible or improbable that the decrease in the next 21 years will equal, if not exceed the decrease of the last 21 years.

*Modes of Infection in Man.*—The human subject may be infected by the tubercle bacillus: i.—by ingestion, by which means, as a rule, the tuberculosis of children is brought about. ii.—by inhalation, the most frequent method in young adults, although it may occur at any age; and iii. and iv.—by inoculation and in utero, both of which methods are only of secondary interest as regards the Public Health aspect.

*Active factors in the production of tuberculosis.*—By ingestion the infection is conveyed by food, and by inhalation it is carried into the lungs with the finer particles of dust in respiration. The foods which are principally responsible are milk and the flesh of bovines, although the danger from the latter is much lessened by some form of cooking, and experiment has shown that raw tuberculous meat is much less virulent than uncooked tuberculous milk. The milk of cows assumes infective characters only when the udder is affected and being as a rule partaken of in an uncooked condition by most children it would be expected that abdominal tuberculosis would show its greatest incidence on children, and this is exactly what it does. It is probable that *the great majority of the cases of abdominal tuberculosis are due to milk infection.*

Infective sputum is discharged from the lungs of phthisical persons. Although it is probable that tubercle bacilli are given off in few numbers in the breath of phthisical patients, the sputum must, in acute cases contain numberless quantities. Experiment has shown that moist sputum from a consumptive is capable of producing in animals both by ingestion and injection, tuberculosis, and also that sputum, which has become dried under insanitary conditions and in houses, retains its infectivity for a considerable time. Pocket handkerchiefs and bed linen become infected as well as walls, floors, ceilings, carpets and the various draperies, and a case of phthisis before death will render a room highly infective and dangerous unless suitable preventive measures have been adopted during the illness. Considering the number of phthisical persons in existence it is extremely probable *that infection as a result of the indiscriminate disposal of sputum*, *is the most frequent cause of phthisis.*

## BALANCE OF AGENTS.

| *a.* Assisting in the propagation of Tubercular Diseases. | *b.* Natural methods at work, resisting. |
|---|---|
| *Predisposing conditions :—*<br>Crowded and insanitary houses and workshops.<br>Crowded sites.<br>Heredity.<br>Intemperance.<br>Previous illness.<br>Occupation.<br>*Exciting causes.*<br>Infected milk and other food stuffs.<br>Negligent disposal of the discharges of infected persons. | The inherent obstacle to infection presented by the human body. Some altered state of the tissues being necessary before infection takes place, and even under such conditions the bacillus is not always able to obtain a foothold. |
| *Features referable to the Bacillus.*<br>The enormous number of bacilli discharged by consumptives.<br>Its tenacity of life under certain conditions.<br>The property the bacillus has of forming alliances with other organisms favouring both the onset of the disease and a fatal termination. | The natural tendency to loss of virulence of the bacillus and its susceptibility to Sanitary conditions, sunlight and air. |
| *Features referable to the disease.*<br>Long incubation period and chronic course with infective quality before recognition of nature of illness.<br>The possibility of transference of the disease to domestic animals. | |

## PREVENTIVE MEASURES.

The preventive measures which may be brought to bear upon this disease are as follows:—

*I. General.*—The general measures consist in rendering insanitary areas habitable and preventing overcrowding, general supervision of the construction of new houses, and altering or demolishing such houses as are not fit for habitation. Workrooms require to be brought up to a sufficient standard as regards ventilation and cubic capacity per person, and by careful inspection the food supply requires to be raised above suspicion. Active and energetic, and on the whole, satisfactory measures in this direction have now been in progress for some considerable time, and detailed work bearing upon the above subjects has frequently engaged the attention of the Committee.

With respect to the milk supply, new regulations are now in force within the Borough, which will bring the cow-sheds up to the required standard, but with the improvement inside the Borough, it is hoped that equally stringent measures will be enforced in the outside districts, for not more than one-tenth of the milk consumed in the town is produced by cows stalled therein. It is a matter for consideration whether the districts in the administrative County ought not to be administered with respect to the Dairies and Cow-sheds Regulations, by a Central Authority, and by that means the two places would probably be brought up to a common standard, and although the tuberculin test in cattle has much in its favour for the purpose of diagnosing affected beasts, it would appear that the advantages to be obtained from a general adoption of the method could only give permanently satisfactory results if the conditions which predispose to tuberculosis in byres are in the first instance removed.

*II. Education.*—Much can be done to enlighten the public on the subject of tuberculosis by careful education. Easily understandable lectures to working people, under favourable conditions, and carefully worded circulars, brief but pointed, seem to offer the most satisfactory means of carrying this out. The following resolution passed at the Ruridecanal Conference held in Derby on March 9th, shows that interest is being roused in this popular method of disseminating the elementary rules of hygiene, and it is to be hoped that medical gentlemen will be found willing volunteers to assist in carrying out the desire expressed in the resolution. Resolved:—"That this "Ruridecanal Conference invites the Clergy of the Deanery to introduce "the subject of Sanitation and the laws of health to their people by "means of lectures delivered in centres or parishes by medical men "well known in the district."

The following circular has been drawn up as one suitable for distribution :—

## PRECAUTIONS AGAINST CONSUMPTION.

Consumptive persons should remember that they are not suffering from an absolutely incurable disease, and also that they possess to a great extent the power of preventing other persons taking the disease. Attention to the following details will materially assist in attaining both ends.

1.—Sunlight and fresh air are the greatest enemies to the infection and are also of the greatest assistance in promoting a cure. Consumptives should sleep alone with the bedroom windows open top and bottom, and during the day time, keep out of doors as much as possible, and whilst indoors occupy well ventilated rooms.

*It is chiefly by means of the expectoration (spit) that the infection is spread, and the following rules should be strictly observed.*

2.—Indoors—the expectoration should be received into small paper bags and at once burnt ; at night, spitting cups containing a little disinfectant should be used. These should be washed out with boiling water daily.

3.—Out of doors—spitting in streets, tramcars, or any public places, should be carefully avoided, a suitable vessel should be carried about into which the expectoration may be received, and which afterwards may be washed out with boiling water.

4.—If handkerchiefs are used they should never be allowed to become dry, but should be soaked in boiling water whilst the expectoration is still moist. *It is in the dry condition that the expectoration becomes dangerous.*

5.—Dry cleansing of the rooms occupied by a consumptive should be dispensed with as much as possible ; wet cleansing should be substituted, and all refuse from the room should be at once burnt.

Suitable receptacles for the reception of expectoration may be obtained on loan at the Sanitary Office, Ford Street, as well as a supply of disinfectants. Disinfection of the house will be undertaken free of charge on receipt of an expressed desire to that effect.

*III. Notification of Phthisis and Tubercular Diseases.*—Many Medical Officers of Health are advocating the compulsory notification of Phthisis, in the hope that it may prove a useful adjunct to other measures, but it is not quite certain whether it is yet a desirable innovation, and the following reasons are advanced against the proposal. There is not much similarity between phthisis and other notifiable diseases. The infective period in phthisis extends in some cases over years, and the person affected can control the disposal of the infective element, viz:—the sputum, whereas in the notifiable diseases the infective period is limited to weeks, and is mostly not capable of control by the sufferer. Notification would necessitate Sanitary control being exercised over a person for a period of years,—if of course any control is contemplated as a result of notification—and not weeks, and owing to the public not yet being educated to the point of recognition of the precise infective quality of the disease, the system of inspection might cause the person to be looked upon as one to be avoided, with the undesirable result of possible dismissal from work. The fear of hardships and disagreeable consequences might prevent persons seeking medical aid, and thus defeat the object notification had in view. Then again, what considerable advantage would compulsory notification confer? Disinfection, which would not be of much advantage except after death or removal of a patient could be offered after a fatal result. The former cases may be ascertained weekly from the local Registrar's returns, and the latter by arrangement with hospital and workhouse Authorities. If isolation were possible notification would be more desirable, but it is not, and instructions to the patient ought to be the duty of the medical man in attendance.

Voluntary notification, however, your Medical Officer would strongly advocate, feeling sure that it would, in the present state of public knowledge be more acceptable to both householders and medical practitioners. It would necessitate the judgment of cases which ought to be investigated by the Medical Officer of Health being left to the medical man, and I am quite sure that the cases coming to their knowledge which were apparently the result of influences remediable by the Authorities, would be willingly and loyally reported.

*IV.—Disinfection.*—Free disinfection should undoubtedly be offered to every householder in whose house a death from phthisis is reported by the Registrar, and also in the case of phthisical persons removed to either General or Workhouse Hospital for treatment. Arrangements could easily be made for that purpose. A resolution to this effect was passed by the Committee some considerable time ago, but your Medical Officer is unable to trace any work which has been carried out in connection with it.

*V.—Bacteriological Diagnosis.*—Many cases of slight lung trouble, the symptoms of which are somewhat obscure and prevent a positive diagnosis being arrived at, would undoubtedly benefit if the expectoration could readily, and without expense being entailed, be submitted to bacteriological diagnosis. This would not prove either a difficult or expensive matter, and in conjunction with the bacteriological diagnosis of other infection ailments, and the probable—at no distant date—future systematic bacteriological examination of drinking water, arrangements ought to be made for carrying this suggestion into effect.

*VI.—Isolation.*—In the Harben Lectures for 1898, Sir Richard Thorne-Thorne drew attention to the possibilities for good which Sanatoria for phthisical persons presented. One of the objects of the National Association for the Prevention of Tuberculosis is the erection of Sanatoria in various parts of the country. The Report of the Council of the British Medical Association states, "With regard to early cases it would appear to be within the powers of Boards of Guardians and of Sanitary Authorities to provide special Sanatoria on selected sites, where the open air treatment, and suitable dieting, could be applied."

In his last report your Medical Officer briefly drew attention to the results of Sanatorium Treatment, and the Committee instructed him to report further on the matter.

In considering the question of the applicability of an open-air Sanatorium, as part of the defensive armament of the Health Department against infectious diseases, it must be regarded mainly as an Isolation Hospital. The curability of phthisis must be admitted as a fact, and to that extent it would be a great advantage to the individual, but the real point to consider here is whether the benefit to the public at large would be sufficient to warrant the expenditure of the money, time, and energies which the project would necessarily entail.

With a view of ascertaining to what extent the principle of isolation could be applied to cases of pulmonary tuberculosis, your Medical Officer visited in company with the Mayor and Mr. Alderman Harrison, three of the Sanatoria in Germany. After much consideration—time was limited—Hohenhonnef was chosen, being one of the most luxuriously appointed places on the continent, Ruppertshain, one of the few recently erected institutions for the working classes, and Nordrach, which was believed to possess certain novel features, both in structure and treatment, which has gained for it a high reputation.

The following tabulation gives a few general features, and a brief description follows :—

| Opened. | Nordrach Colonie.<br>1888. | Ruppertshain.<br>1895. | Hohenhonnef.<br>1892. |
|---|---|---|---|
| Situation ... ... | In the Schwaz Wald. Protected by hills covered with pines except to the south-west. | In the Taurus Mountains. Hills covered by various trees. | In the Siebengebirge, looking up the Rhine. Well-wooded mountain. |
| Elevation ... ... | 1470 feet. | 1300 feet. | 774 ft. |
| Strata ... ... | Red Sandstone | Slate, gneiss, porphyry | Dry sub-soil, rocks, a a steep slope. |
| Aspect ... ... | South | South-east | South-west |
| Climate ... ... | Variable and moist | Moderately moist—Rain and fogs in cold months | Not particularly dry. |
| Extent of Grounds | 80 acres | 11 acres, but public woods available. | Nearly 100 acres. |
| Ventilation... ... | No special means | Natural | Natural. |
| Lighting ... ... | Electricity | Electricity | Electricity. |
| Heating ... ... | Electricity and low pressure water | Low pressure water | Low pressure water. |
| Milk Supply ... | Own dairy of 10 cows | ... ... | From Model Dairy. |
| Special Accessories | Steam Laundry, refrigerator (all meat kept 14 days before use) | Laundry, &c. Liegehallen | Liegehallen. Laundry, Stables, &c. |
| Charges ... ... | 10 marks a day | 5 marks and 3 marks a day, with a few special patients at 2½ marks | Up to about 20 marks a day or more. |
| Accommodation ... | 45 | Over 80, and extensions now in progress | Ninety, others live in Honnef and are visited by Dr. Meissen. |

Structurally all the places are built so that rooms shall be airy, well ventilated, and with large window capacity, the windows being so placed that the maximum of sunshine shall enter the rooms. Special contrivances for avoiding dust, and facilitating cleansing are introduced, such as polished floors, rounded corners, and suitable wall coverings. Liegehallen for outside rest are constructed at Hohenhonnef and Ruppertshain. These are provided with mechanical means designed to shelter against the wind. There are no liegehallen at

Nordrach. The internal arrangements at Hohenhonnef are most sumptuous, and would apparently tend to encourage indoor resting, but such we were assured was not the case. Common rooms are not encouraged at Nordrach, neither are entertainments which might tend to unduly excite patients. At Ruppertshain the number of persons sleeping in a room varies from one to six, at Nordrach and Hohenhonnef single rooms are the rule. The capacity of the rooms at Nordrach is about 1,500 cubic feet; at Hohenhonnef none have a less capacity than 2,470 feet. The furnishing of bedrooms is carried out on the same principle as the structure of the rooms, all upholstering and furniture being of such material as least retain dust, and will assist cleansing.

*Principle of Treatment.*—At Nordrach, Dr. Walther insists that the treatment varies with each individual. Each person is seen thrice daily by the doctor who, by that means, has ample opportunities of studying the special characteristics of every patient, and as a result suitable directions are given to the patient. Certain general principles may be recognised, viz., the greatest possible amount of fresh air, an abundance of good nourishing food, and graduated exercise. Patients take their own temperatures four times a day, and until the temperature has been normal several days no exercise is indulged in. Patients who are allowed to exercise take their temperatures immediately after a walk, and special note is made of any increase of temperature. The thermometer is to a great extent the index for the amount of exercise. Dr. Walther presides at meals and apportions the quantity and kind of food for each patient personally. Patients retire at 9 p.m. and rise at seven. Three meals a day are given, and an hour's rest is taken before dinner and supper.

At Ruppertshain the principles of treatment are those in vogue at Falkenstein, the former place having been erected under the direction of Dr. Dettweiler, the late Medical Officer of Falkenstein.

There are five meals a day and more attention is given to rest in the open air than exercise. Drugs are very little used, but douching is part of the treatment. At Hohenhonnef the principles are much the same as Dettweiler's methods, but douching is little indulged in, and rest or exercise is given according to circumstances. In all cases care is taken that the expectoration shall be properly disposed of. Patients carry Dettweiler's flasks outside and suitable spitting cups and spittoons are available in every room inside. Regular bacteriological examinations of the sputa are made and recorded, as well as clinical examinations of the patients at regular periods varying in each institution.

*The utility of Sanatoria.*—The results to be hoped for from Sanatorium treatment are:—cure, isolation, and education of the patient.

The curative function is only possible to a limited extent. Cases cannot be cured after they have passed a certain stage, but generally speaking the earlier a case comes under treatment the greater is the probability of success, but certain clinical types of phthisis are noted, due no doubt to unknown factors, in the life history of organism in its relation to the person affected which cause what would apparently be favourable types of the disease to progressively run an unfavourable course and vice versâ. The number of cases which return home from Sanatoria absolutely cured is probably well under 20 per cent. although the percentage of cases returned as improved is great, thus at Hohenhonnef of 522 persons who had undergone the treatment, 17.2 per cent. were returned home cured, 31.6 per cent. showed great improvement, and 20.1 per cent. showed some improvement. At Rieboldsgrün Dr. Walters quotes that out of 2000 patients 13.6 per cent. were cured, 28 per cent. were greatly improved and 25.2 per cent. were improved. The following table adapted from that of Dr. F. Rufenacht Walters, gives further particulars. With respect to the improved class it is very probable that with well-to-do persons, the conditions necessary for further improvement can be obtained on returning home, and the improvement may become cure, in fact, statistics show that such a result does undoubtedly follow in many of such cases, but whether this would happen with working class patients is at least doubtful. Originally sent from homes and districts, the surroundings of which, and the occupation in many instances, are conducive to that condition of the system most readily attacked by the disease, they would be allowed three to five months' treatment which might possibly bring about a cure, but in the majority of instances it would only be improvement. In the cases where a cure had been effected it would be recent, and the body could hardly be said to have returned to its normal power of resistance in a few months, and the probability is that on the return of the patient to his former surroundings, and perhaps an absolute necessity for his immediate return to work, the former patient would again be

*Results of Treatment in Pay Sanatoria.*

| Name of Sanatorium. | Number of Cases. | Stages of Disease admitted. | PERCENTAGE RESULTS. | | | Total Proportion improved. |
|---|---|---|---|---|---|---|
| | | | Apparently Cured. | Nearly Cured. | Improved. | |
| Brehmer ... ... | 5032 | All | 11 | 15.6 | ... | ... |
| „ exclusive of third stage.. ... ... | 3615 | 1 & 2 | 14.9 | 20.9 | ... | ... |
| Falkenstein ... ... | 1022 | ? 1 & 2 | 13.2 | 11 | ... | ... |
| Rieboldsgrün ... ... | 2000 | ? 1 & 2 | 13.6 | 28 | 28.6 | 70.2 |
| „ ... ... | 715 | ? 1 & 2 | ... | ... | ... | 78. |
| Hohenhonnef ... ... | ... | ? 1 & 2 | 14.5 | 28.9 | ... | 69. |
| Ruppertshain ... ... | 313 | ... | ... | ... | ... | 77.6 |
| Hanseatic Insurance Co. | 1541 | Slightly affected 30.9 °/ₒ | ... | ... | ... | ... |
| Local ... ... ... | ... | ... | ... | ... | ... | 58.1 |
| General ... ... | ... | ... | ... | ... | ... | 85.5 |
| Adirondack ... ... | mean of ten years | ... | 20.25 | 20.30 | ... | ... |

subject of another attack. This relapse in the case of the "cured" would be more probable in the case of the "improved." Sanatoria for working class patients have not sufficiently long been established to furnish any statistics bearing on the above possibilities, but the experience of Dr. Walther, related to your Medical Officer, bears them out. Some time ago he reserved a number of beds for the treatment of working class patients, who were chiefly sent to him by societies, and although the improvement manifested by these patients was equal to that of their better-off brethren, relapses almost invariably followed on their return home. From this it would appear that to make the benefits of Sanatoria lasting upon the class of patients who might reasonably be expected to avail themselves of the advantages of a Municipal Sanatorium, a further period of "hardening" would be necessary perhaps in special homes with graduated work. The length of time for the treatment would obviously prove an obstacle in many instances.

This same objection is recognised by Dr. Knoff, in the North American Review (Feb.), who suggests amongst other things, that if a phthisical patient is to be removed to a public institution for treatment an enquiry should be made into his financial position, and if his removal would render the family destitute, the Municipality should provide for their wants if necessary.

The advantages of isolation and education of the patient which Sanitorium treatment confer are of considerable value. For several months a patient would be removed from centres of population, removing the risk of dissemination of the infection, and at the same time discharging less and less of the infective material. He would also be taught the principles of living a life most suited to strengthen himself against the disease, and also the way to render himself less a danger to others by the acquired habit of proper disposing of the sputum.

*Comparison between Phthisis and other Infectious Diseases which are usually isolated.*—A comparison between phthisis and other infectious diseases will show considerable weakness in the advantages which may be expected to be derived from the isolation of cases of consumption, and although the cure of the patient in an isolation hospital is an important element, it is secondary to its utility as a preventive means. Suppose Scarlet Fever be taken as typical of the infectious diseases. In this disease the patient is ill for a relatively short period, say six to eight weeks, the symptoms as a rule are pronounced and typical, allowing of an early diagnosis being made, and by appropriate treatment the great majority of the cases are cured, the cure being almost always permanent. With Phthisis, on the contrary, the patient is probably ailing for months before medical advice is sought. The onset of the disease is most insidious, and in most cases the diagnosis cannot be made with certainty until after a fairly long period, and it is probable that during this time infective matter is being indiscriminately disposed of without the patients being aware of the fact. Further, after a diagnosis has been made isolation would be necessary for months instead of weeks, and the possibility of relapse, would be considerable.

Again, in Scarlet Fever, the infection is only under the control of the patient to a very limited extent, whilst in the case of phthisis, *the infection is almost entirely under the control of the patient.* The comparison would result similarly if any other of the usually isolated diseases were substituted for Scarlet Fever.

*Other Considerations.*—It is probable that the rich and better middle class would prefer treatment in well-appointed paying institutions, and whether the class of patients which isolation would be provided for would avail themselves of isolation in sufficient numbers, and at a sufficiently early period of the disease is not quite certain. The majority of phthisical persons are between the ages of 20 and 45—wage earning years—and years at which most persons have others dependent upon them. It is doubtful whether a man, whilst he has any working power left, could be persuaded to leave his family for months if without any means of sustenance, and simply dependent upon charity and the work his wife may be able to obtain for their means of livelihood; the result would be that isolation would only be accepted when work was no longer possible, and when his removal would be the removal of an increasing incubus to the family. His condition would be less favourable for recovery, and would require a longer period to complete it. In the case of women the same objection might not hold, but a family of young children would prove an insuperable obstacle in many cases.

*Conclusions.*—1. Although the value of sanatorium treatment is undoubtedly great to the patient, the probability of absolute cure, or restoration to full working power within a reasonable time, is not sufficiently high as compared with the numbers returned as improved, nor are the conditions of life under which the greater proportion of cases live which might be expected to come under treatment in a Municipal sanatorium such as would offer a sufficient hope of the improved stage progressing to the cured after discharge, to warrant the expenditure of money in that direction.

2. A more permanent and lasting benefit, and one which certainly recommends itself as more logical, would accrue by devoting the cost and expenses of such an institution to remedying those conditions in the poorer parts of the town, which act as predisposing factors of the disease. A conscientious and energetic policy directed against tuberculosis will cost money, and it would be better not to choke the work by draining the supplies; at a later period when, by these means, the number of cases is still further lessened, and remediable causes are reduced to a minimum, it is possible that individual sufferers will present a greater proportionate danger than at present, and, in such an event, a more cogent reason for isolation will exist.

3. Having in view the fact of the infectious nature of phthisis, and its special incidence on persons of lowered vitality, and such must constitute the greater number of cases under treatment in the medical wards of General and Infirmary Hospitals, the principle of treating cases of pulmonary tuberculosis in such places is undesirable. Although the idea of a Municipal sanatorium is deprecated, nevertheless separate institutions should be erected for the treatment of phthisis either by private enterprise or public subscription, and the advantages which isolation of *suitable* cases (from the Public Health standpoint) would confer upon the public would be sufficient justification for the payment of the weekly charge which removal of such cases would entail.

4. Numerous cases of illness such as pneumonia, acute bronchitis, difficult confinements and injuries occur amongst the poorer working classes. These are often debilitating to a considerable degree. The conditions under which some of these people live, are not such as favour a speedy return to their normal condition, and in consequence they resume their usual occupations with a condition of the system less able to resist the attacks of the Tubercle Bacillus. It is quite possible that cases such as these ultimately cause no inconsiderable addition to the phthisis mortality. The remedy is, of course, more suitable convalescent homes where the poor may be sent to receive the finishing touches after debilitating illnesses, not only those who may have been treated in the Infirmary, but those who have passed through their illness in their own homes.

Richard Keene, Limited,
Printers,
Iron Gate, Derby.